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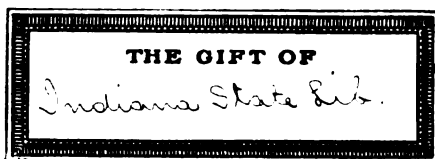
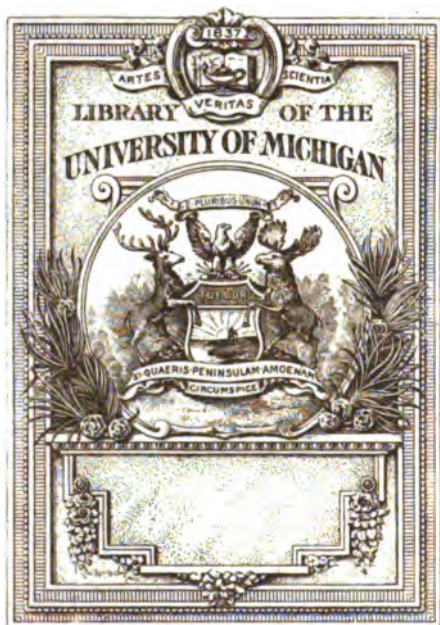
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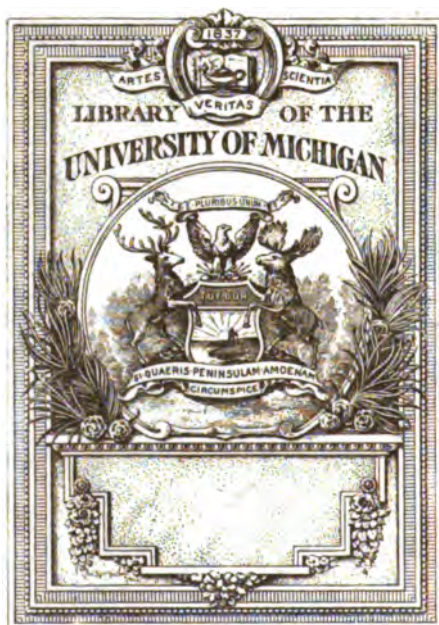
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THIRTY-THIRD ANNUAL REPORT

OF THE

**Indiana State Board  
of Health.**

For the Fiscal and Board Year Ending September 30, 1914

For the Statistical Year Ending December 31, 1914

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**To the Governor**

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INDIANAPOLIS:

WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING

1915

THE STATE OF INDIANA,  
EXECUTIVE DEPARTMENT,  
NOVEMBER 28, 1914.

Received by the Governor, examined and referred to the Auditor of State for verification of the financial statement.

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OFFICE OF AUDITOR OF STATE,  
INDIANAPOLIS, December 4, 1914.

The within report, so far as the same relates to moneys drawn from the State Treasury, has been examined and found correct.

DALE J. CRITTENBERGER,  
*Auditor of State.*

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DECEMBER 4, 1914.

Returned by the Auditor of State, with above certificate, and transmitted to Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

B. B. JOHNSON,  
*Secretary to the Governor.*

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Filed in the office of the Secretary of State of Indiana, December 4, 1914.

HOMER L. COOK,  
*Secretary of State.*

Received the within report and delivered to the printer, December 4, 1914.

ED D. DONNELL,  
*Clerk Printing Board.*

## MEMBERS OF THE INDIANA STATE BOARD OF HEALTH.

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T. HENRY DAVIS, M. D., President.....	Richmond
JAMES S. BOYERS, M. D., Vice-President.....	Decatur
H. H. SUTTON, M. D.....	Aurora
J. L. FREELAND, M. D.....	Indianapolis
J. N. HURTY, M. D., Phar. D., Secretary.....	Indianapolis

Indiana State Library  
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## LETTER OF TRANSMITTAL.

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INDIANAPOLIS, November 30, 1914.

HON. SAMUEL M. RALSTON, *Governor of Indiana*:

Sir—I have the honor to present herewith the Thirty-third Annual Report of the Indiana State Board of Health. The report, according to the law's commands, gives the transactions and expenditures for the fiscal year ending September 30, 1914; also complete report of the work of the two departments of the State Laboratory of Hygiene, which is under the control of the State Board.

The Statistical Report, which according to the law shall be for the calendar year, cannot be compiled until after that date. We shall, therefore, send in said statistical report as soon after January 1st as it can be tabulated and analyzed; and with our present force and facilities it will take three, or perhaps four months, to do the work. We will push this report with all possible speed.

Very respectfully,

J. N. HURTY,  
Secretary.

# THIRTY-THIRD ANNUAL REPORT

## OF THE

# INDIANA STATE BOARD OF HEALTH.

HON. SAMUEL M. RALSTON, *Governor of Indiana:*

Sir—The Indiana State Board of Health, in accordance with the commands of the statutes, has the honor to present herewith its Thirty-third Annual Report, which is for the fiscal year ending September 30th and the statistical year ending December 31, 1914.

### THE PUBLIC HEALTH.

Although we have not full data at this time, still we have enough facts and observations to warrant the statement that *the public health*, during the year just past, improved somewhat over the preceding year. The number of cities and towns holding clean-up-days in the year increased over 100 per cent.; the letters and inquiries relating to personal, domiciliary and public hygiene show a like increase; and our vital statistics show a slight decrease in the death rates from consumption, pneumonia, typhoid fever and diphtheria.

### EPIDEMICS.

Smallpox, which has been endemic for ten years (the disease being reported present in three or more counties in every month) has been endemic in sixteen counties, with few fatalities.\* Diphtheria and scarlet fever outbreaks have been milder and fewer than in preceding years. There seems to have been a decline in the severity of all eruptive fevers and so-called children's diseases. Poliomyelitis, which threatened to become epidemic in the preceding year fell fully 80 per cent. in prevalence. An exhaustive review and summary of this whole matter will be found in connection with the vital statistics report, which will be tabulated and analyzed, as the law directs, for the calendar year.

### SCHOOL SANITATION.

The board believes the greatest advancement in the public health cause may be made through the schools and therefore has continued its efforts in this field. The special school hygiene work was

\*The table and monthly reports found in the statistical report will give all figures collected.



begun with special interest in 1911, in which year were enacted the Sanitary School House Law and the Medical Inspection Law.

The campaign for better health in the schools has consisted in efforts to secure, as rapidly as local school funds would permit, better housing, with all sanitary requirements and ample playground facilities; medical inspection; teaching of personal hygiene; and imparting instruction in the prevention and management of infectious diseases. Through letters, and by personal visits of the secretary and assistant secretary, and through the distribution of health circulars, teachers have been directed and stimulated in teaching health.

We consider as important in this work the adoption of "*The Indiana Child Creed*" and its circulation in the schools. This creed is as follows:

INDIANA CHILD CREED.

Every child has the inalienable right to be born free from disease, free from deformity and with pure blood in its veins and arteries.

Every child has the inalienable right to be loved; to have its individuality respected; to be trained wisely in mind, body and soul; to be protected from disease, from evil influences and evil persons; and to have a fair chance in life. In a word, to be brought up in the fear and admonition of the Lord.

That State is delinquent which does not ceaselessly strive to secure these inalienable rights to its children.

We think that if this creed is committed to memory by the school children, its principles will be adopted, and within not to exceed two generations, its teachings will be put into practical operation. If this does happen, then, surely, a great deal, indeed, most of disease, with its accompanying cost and social ills, will disappear. It is plain we must teach to the children the truths we would have the people to adopt and make a matter of every day life.

*Child Welfare* is far more important than trying to cure disease and to bring relief to adults, and if there is not enough money and strength in a government to look efficiently after child welfare and the helping of unfortunate adults, then it would be best to let the latter work languish. Above has been set forth the plans and efforts of the State Board for the protection and betterment of the health of the school children and teaching them concerning the protection of their health, but child welfare effort begins before birth. Recognizing this fact the State Board asked the Sixty-eighth Gen-

eral Assembly for the money and authority to print and distribute to young mothers a little book to be called the *Indiana Mothers' Baby Book*. Twenty-five hundred dollars were given for this highly important work and this has enabled the board to issue an edition of 8,000 copies. There are about 22,000 first mothers in Indiana annually, and therefore only 37 per cent. can be supplied. The demand for the book has been far beyond the ability to supply, and hundreds of letters have been necessary to explain to young mothers why only a small proportion of them can have the instructions they so much desire. We hope the next Assembly will clearly see the economic and humanitarian worth of the *Indiana Mothers' Baby Book* and give an appropriation sufficient to make a present of the book to every first mother annually. We are glad to record that several medical magazines and several metropolitan dailies have made editorial notices of this book, commending the idea and crediting our State with having done an unusual and good thing in issuing it.

#### ALL TIME HEALTH OFFICERS.

The health laws of the State of Indiana on the whole are very good, but a chain is no stronger than its weakest link, and the weak link found in our health laws is the public health officer. At the present time men engaged in active practice of medicine are selected as health officers. No matter how excellent the character, personality and training of the physician is, he cannot possibly secure the coöperation of his brother physicians with whom he is in competition while he practices medicine. Without this coöperation he cannot succeed, except partially, in public health administration. Being a practitioner, the health officer very frequently finds himself called upon to abolish insanitary conditions upon the premises of men who are his patrons. It is natural, under such conditions, for him to halt and overlook the fault of his patron. The third objection is that no man can serve two masters. The health officer, under the present system, must earn his living practicing medicine and doing a little health work on the side for very small pay. He must perforce give the greatest part of his time and energy to earning his living, and so it happens that he is expected to serve himself and also the public. This cannot be successfully done. The remedy is to make the health officer an all-time officer. An amendment to the old law is needed which will be up-to-date and scientific, and which would provide trained sanitarians to do the work of public sanitation. All-time health officers would give their entire time to keeping away disease and improving the public health, and would

not practice medicine. Such officers should be appointed by local authorities from an eligible list upon which they secure recognition through physical and mental examinations by the State Board of Health. Each county should appoint its own county health commissioner; his salary should be graded, regulated by the number of people he serves; his duties and powers should be fully defined; he should keep full and accurate records of all work done; he should be a deputy of the State Board of Health and subject to dismissal for such reasons as the law sets forth; he should be held responsible for the public health in his county. Such official would save annually to the people in prevented sickness a sum many times greater than his salary.

A modern health law as above outlined would not create a new office, but would make an old office up-to-date and efficient. It would abolish all town health officers and all city officers and boards of health, except in large cities—say cities of 10,000 and over. Officers for small towns and cities would be unnecessary under the new system, and their abolition would be a saving of money, with increased good results. A modern health law requiring trained health officers giving their entire time to the work would not be an expense, but a true investment. The system would bring splendid returns in freedom from epidemics, in bettered health with its increase of wealth and happiness. In one Indiana city very lately an efficient veterinarian who had served as meat and milk inspector was discharged and a drug clerk appointed. This was a case of miserable politics, from which the city now suffers. It is interesting to speculate as to how long it will be before Indiana will throw off the yoke and burden of politics and ordain that merit and efficiency only shall be considered in the appointment of health officials. The mayor who displaced the competent man and put in the untrained druggist surely opposed the best interests of his city. The State Board of Health will present a bill creating all-time health officers in each county to the next Assembly and sincerely hopes the Governor will support it.

#### SANITARY ENGINEERING DEPARTMENT.

A Sanitary Engineering Department is greatly needed. Sixteen laws command the State Board of Health in its health work. Among them is the law regulating the pollution of streams. It is impossible for the board to efficiently enforce this law without a trained sanitary engineer with engineering equipment and a special laboratory. Such a department is also necessary if the board is to

render the service to cities and towns which the statutes command. Under the present conditions much letter writing and long explanations are necessary to make clear why the board cannot fulfill the duties set forth in the law and render the services demanded.

It is surely quite unnecessary to here set forth the economic, sanitary and even business necessity for looking after the pollution of streams, sewerage and water supplies, and enforcing the laws pertaining thereto. We recommend therefore that the State Board be empowered and given a proper appropriation to establish a *Sanitary Engineering Department*. The economic value of such a department would amount to several hundred thousand dollars annually and so pay its cost many times over. The board will present a bill to the next General Assembly and sincerely hopes the Governor will support it.

#### THE HYDROPHOBIA LAW.

Under the Hydrophobia Law of 1911 it is made the duty of the State Board of Health to provide means to give the Pasteur preventive treatment to persons in danger of hydrophobia and who are without visible means to pay for such treatment. The law also authorizes the State Board of Health to establish and maintain an institute for the purpose. Since July 1, 1911, when the funds as provided by law became available, the Board has treated 450 cases at a total expense of \$17,450.48, or an average of \$38.80 for each case. This total expense includes not only expense of treatment, but the traveling expense of patients, their living expense while under treatment, and the equipment and maintenance of an "institute" under the supervision of the Laboratory of Hygiene of the State Board of Health. The work imposed by the Hydrophobia Law, added to the already large and ever increasing work of the Laboratory of Hygiene, has made it most difficult for the laboratory to render good service to the State, and has made it impossible for the present force available and the lack of room at the present location, to give that prompt and efficient service which its importance demands. The laboratory, together with the Pasteur Institute should be given large quarters with a sufficient equipment and force to enable it to not only give prompt and efficient service in the routine work imposed upon it by law, but to enable it to carry on experimental and research work and to inquire into epidemics and the obscure causes of disease. Such research work should be a logical and integral part of the work of every laboratory conducted as an aid to public health work, but this has been denied by lack of

appropriation. This we ask to be corrected by increasing the percentage of the surplus dog tax, from which the rabies fund is obtained, from five to ten per cent. We ask also that the proviso in Section 1 of the Hydrophobia Law be repealed, for it has twice stopped the work of life saving from this disease.

#### LABORATORY OF HYGIENE.

The Laboratory of Hygiene, the very great value of which will be attested by all our physicians, and which is performing an important part in lowering the sick and the death rate of the State, is situated in Room 122 on the third floor of the State House. For many reasons, it should never have been located in the capitol building and should be removed therefrom. The character of work done in it, namely, the handling of disease germs and diseased tissues, demands that it be in a building by itself. Besides, it has outgrown its present quarters and daily we are compelled to tell the people we cannot serve them because our capacity is reached. We therefore suggest that the Legislature give permission for the State Board of Health to rent suitable quarters and move this laboratory out of the State House. In order to do this, and to meet the increased demands upon the laboratory for services, it would be necessary to increase its appropriation. The appropriation for the Laboratory of Hygiene at the present time is \$10,000 per annum, and \$5,000 more should be granted to meet the increased demands of the people which now must be turned down. In order to fit up and pay the rent of suitable quarters outside the State House building another \$5,000 would be required. We therefore ask that the appropriation for the Laboratory of Hygiene be made \$20,000, and permission be given to rent suitable quarters and move the laboratory out of the State House. The betterment which would attend this change would be very great indeed. It would give another room in the State House for other purposes, and it is well known more room is greatly needed.

We hope after a review of the situation, that it will meet with your judgment and be your pleasure to advocate these recommendations.

Approved by the State Board of Health.

T. HENRY DAVIS, President.

JAMES S. BOYERS, Vice-President.

H. H. SUTTON, Member.

J. L. FREELAND, Member.

J. N. HURTY, Secretary.

## FINANCIAL STATEMENTS.

### OFFICE STATE BOARD OF HEALTH.

#### *Specific Appropriations for 1914—*

Secretary's salary .....	\$3,000 00
Chief Clerk Vital Statistics.....	1,500 00
Baby Book .....	2,500 00
<b>Total .....</b>	<b>\$7,000 00</b>

#### *Expended—*

Secretary's salary .....	\$3,000 00
Chief Clerk Vital Statistics.....	1,500 00
Baby Book printing and postage.....	2,499 98
Reverting to General Fund.....	02
<b>Total .....</b>	<b>\$7,000 00</b>

### INDIANA STATE BOARD OF HEALTH.

#### *For Fiscal Year October 1, 1913, to September 30, 1914.*

1913.

Oct. 10.	To Central Union Telephone Co.....	\$20 00
" 10.	To Indianapolis Telephone Co.....	22 50
" 10.	To Indianapolis Calcium Light Co., labor and merchandise .....	5 95
" 10.	To Staley & Crabb .....	1 40
" 10.	To Dr. T. Henry Davis, expense to board meeting .....	3 25
" 10.	To Dr. J. S. Boyers, expense to board meet- ing .....	45 05
" 10.	To Dr. H. H. Sutton, expense to board meet- ing .....	6 80
" 17.	To Essanay Film Mfg. Co., one film.....	85 90
" 17.	To Dr. A. T. McCormack, services.....	130 00
" 17.	To Dr. W. G. Swank, auto and services.....	5 00
" 17.	To Charles L. Harris, auto and livery.....	6 00
" 31.	To Dr. W. F. King, salary.....	208 33
" 31.	To Jas. L. Anderson, salary.....	125 00
" 31.	John Owens, salary .....	125 00
" 31.	To Ethel Hoffman, salary .....	60 00
" 31.	To Louise Lingenfelter, salary .....	60 00
" 31.	To Fannie Stevenson, salary .....	60 00
" 31.	To Sadye Slutzky, salary .....	50 00

1913.		
Oct.	31.	To Lucetta Lee, salary ..... \$50 00
"	31.	To Elva Schweitzer, salary ..... 50 00
"	31.	To Nelle Rollison, salary ..... 50 00
"	31.	To Fred Ebert, salary ..... 40 00
Nov.	6.	To J. L. Anderson, expense ..... 7 23
"	6.	To Dr. W. F. King, expense ..... 14 65
"	6.	To Fred Ebert, expense ..... 67 15
"	6.	To John Owens, expense ..... 109 08
"	6.	To Dr. Ada E. Schweitzer, expense ..... 5 20
"	6.	To Aquos Dist. Water Co., merchandise..... 3 00
"	6.	To W. H. Bass Photo Co., merchandise..... 81 45
"	6.	To W. B. Burford..... 89 00
"	6.	To Thomas A. Edison, Inc., 1 film..... 79 55
"	6.	To Adams Express Co., service..... 3 65
"	6.	To American Express Co., service..... 4 05
"	6.	To United States Express Co., service..... 75
"	6.	To Fertig & Keever, signs ..... 17 00
"	6.	To Indiana Press Clipping Service, clippings 10 00
"	6.	To Indianapolis Calcium Light Co., labor and merchandise ..... 34 85
"	6.	To W. K. Stewart Co., hooks..... 4 25
"	6.	To L. Tanner, "Rat" ..... 2 00
"	6.	To Indianapolis Telephone Co., tolls..... 6 80
"	6.	To Western Union Telephone Co., tolls..... 40
"	6.	To Weber Drug Co., soap..... 1 00
"	6.	To Williams Automobile Livery, livery..... 8 50
"	6.	To American Medical Pub. Co., subscription. 1 00
"	26.	To R. E. Springsteen, postage stamps..... 140 00
"	30.	To Dr. W. F. King, salary..... 208 33
"	30.	To J. L. Anderson, salary..... 125 00
"	30.	To John L. Owens, salary..... 125 00
"	30.	To Ethel Hoffman, salary ..... 60 00
"	30.	To Louise Lingenfelter, salary ..... 60 00
"	30.	To Fannie Stevenson, salary ..... 60 00
"	30.	To Sadye Slutzky, salary ..... 50 00
"	30.	To Lucetta Lee, salary ..... 50 00
"	30.	To Elva Schweitzer, salary ..... 50 00
"	30.	To Nelle Rollison, salary ..... 50 00
"	30.	To Fred Ebert, salary ..... 40 00
Dec.	6.	To The Adder Machine Co., merchandise.... 1 90
"	6.	To The American Multigraph Sales Co., mer- chandise ..... 1 50
"	6.	To Aquos Dist. Water Co., merchandise..... 4 00
"	6.	To W. H. Bass Photo Co., merchandise..... 4 60
"	6.	To Conf. State and Prov. Boards of Health, dues ..... 10 00
"	6.	Adams Express Co., service ..... 7 14
"	6.	To American Express Co., service..... 4 25
"	6.	To United States Express Co., service..... 2 20
"	6.	To Indiana Press Clipping Service, clippings 10 00

## 1913.

Dec. 3.	To Indianapolis Calcium Light Co., merchandise .....	\$2 20
" 6.	To C. P. Lesh Paper Co., merchandise .....	95 45
" 6.	To Lyric Film Supply Co., merchandise .....	7 15
" 6.	To Railroad Transfer Co., freight and drayage .....	1 25
" 6.	To Remington Typewriter Co., adjusting...	50
" 6.	To W. K. Stewart Co., books .....	2 50
" 6.	To Central Union Telephone Co., tolls .....	4 55
" 6.	To Indianapolis Telephone Co., tolls .....	4 65
" 6.	To Fred Ebert, expense .....	57 12
" 6.	To Dr. W. F. King, expense .....	24 60
" 6.	To John Owens, expense .....	58 60
" 6.	To Dr. Ada E. Schweitzer, expense .....	13 30
" 6.	To J. L. Anderson, expense .....	0 03
" 17.	To Dr. T. Henry Davis, board meeting .....	12 75
" 17.	To Dr. Jas. S. Boyers, board meeting .....	16 45
" 17.	To Dr. H. H. Sutton, board meeting .....	15 50
" 31.	To Dr. W. F. King, salary .....	208 34
" 31.	To J. L. Anderson, salary .....	125 00
" 31.	To John Owens, salary .....	125 00
" 31.	To Ethel Hoffman, salary .....	00 00
" 31.	To Louise Lingenfelter, salary .....	00 00
" 31.	To Fannie Stevenson, salary .....	00 00
" 31.	To Sadye Slutzy, salary .....	50 00
" 31.	To Lucetta Lee, salary .....	50 00
" 31.	To Elva Schweitzer, salary .....	50 00
" 31.	To Nelle Rollison, salary .....	50 00
" 31.	To Fred Ebert, salary .....	40 00

## 1914.

Jan. 14.	To American Toilet Supply Co., laundry ....	5 55
" 14.	To American Public Health Assn., dues and subscription .....	5 00
" 14.	To Aquos Distilled Water Co., merchandise .....	3 50
" 14.	To W. H. Bass Photo Co., merchandise .....	37 15
" 14.	To W. B. Burford, merchandise .....	113 47
" 14.	To A. W. Bruner, expense .....	37 20
" 14.	To Lee L. Driver, merchandise .....	2 00
" 14.	To Fred Ebert, expense .....	68 05
" 14.	To Adams Express Co., service .....	5 31
" 14.	To American Express Co., service .....	1 75
" 14.	To United States Express Co., service .....	1 25
" 14.	To F. A. Hardy & Co., service .....	5 00
" 14.	To Indiana Press Clipping Service, clippings .....	10 00
" 14.	To Walter Isnogle, charts .....	15 00
" 14.	To The Lancet Clinic Pub. Co., subscription .....	3 00
" 14.	To McIntosh Stereopticon Co., merchandise .....	22 45
" 14.	To Central Union Telephone Co., rent and tolls .....	22 80
" 14.	To Indianapolis Telephone Co., rent and tolls .....	26 70



1914		
Jan. 14.	To J. L. Anderson, expense.....	\$8 40
" 14.	To W. F. King, expense.....	18 35
" 14.	To John Owens, expense .....	91 80
" 14.	To American Medical Assn., subscription....	6 00
" 14.	To Indiana Electrotpe Co., etchings.....	16 50
Expense first quarter.....		\$4,551 83
Jan. 16.	To Dr. T. Henry Davis, board meeting.....	\$3 10
" 16.	To Dr. Jas. S. Boyers, board meeting.....	5 80
" 16.	To Dr. H. H. Sutton, board meeting.....	5 45
" 24.	To Robt. E. Springsteen, P. M., stamps.....	150 00
" 31.	To Dr. W. F. King, salary.....	208 33
" 31.	To J. L. Anderson, salary.....	125 00
" 31.	To John Owens, salary .....	41 67
" 31.	To Ethel Hoffman, salary .....	60 00
" 31.	To Louise Lingenfelter, salary .....	60 00
" 31.	To Fannie Stevenson, salary .....	60 00
" 30.	To Sadye Slutzky, salary .....	50 00
" 31.	To Lucetta Lee, salary .....	50 00
" 31.	To Elva Schwartz, salary .....	50 00
" 31.	To Nelle Rollison, salary .....	50 00
" 31.	To Ethel McDaniel, salary .....	48 00
" 31.	To Fred Ebert, salary .....	40 00
Feb. 9.	To Aquos Dist. Water Co., merchandise....	3 00
" 9.	To W. H. Bass Photo Co., merchandise.....	10 65
" 9.	To Adams Express Co., service.....	21 19
" 9.	To American Express Co., service.....	15 35
" 9.	To Pierre M. Foltz, merchandise.....	8 05
" 9.	To Indiana Paper Co., merchandise.....	3 89
" 9.	To Indiana Press Clipping Co., clippings...	10 00
" 9.	To Adah L. Kendall, services.....	82 57
" 9.	To Sentinel Printing Co., merchandise.....	34 50
" 9.	To W. A. Tingler, merchandise.....	3 00
" 9.	To Central Union Telephone Co., tolls.....	2 00
" 9.	To Postal Telegraph Co., tolls.....	40
" 9.	To Western Union Telegraph Co., tolls.....	1 16
" 9.	To Dr. J. N. Hurty, expense.....	102 50
" 9.	To Dr. W. F. King, expense.....	14 15
" 9.	To Fred Ebert, expense .....	64 85
" 9.	To John Owens, expense.....	5 40
" 9.	To J. L. Anderson. expense.....	6 10
" 9.	To The American Multigraph Sales Co., mer- chandise .....	1 50
" 17.	To E. H. Sargent Co., merchandise.....	21 12
" 17.	To Indianapolis Telephone Co., tolls.....	1 45
" 17.	To Mrs. A. E. Vinton, services.....	5 00
" 28.	To Dr. W. F. King, salary.....	208 33
" 28.	To J. L. Anderson, salary.....	125 00
" 28.	To Ethel Hoffman, salary .....	60 00

1914.

Feb.	28.	To Louise Lingenfelter, salary .....	\$60 00
"	28.	To Fannie Stevenson, salary .....	60 00
"	28.	To Sadye Slutzky, salary .....	50 00
"	28.	To Lucetta Lee, salary .....	50 00
"	28.	To Elva Schweitzer, salary .....	50 00
"	28.	To Nelle Rollison, salary .....	50 00
"	28.	To Ethel McDaniel, salary .....	48 00
"	28.	To Fred Ebert, salary .....	40 00
Mar.	6.	To Aquos Dist. Water Co., merchandise.....	2 25
"	6.	To W. H. Bass Photo Co., merchandise.....	2 60
"	6.	To Fred Ebert, expense .....	66 55
"	6.	To A. W. Bruner, expense.....	8 30
"	6.	To Dr. W. F. King, expense.....	28 05
"	6.	To Adams Express Co., service.....	3 05
"	6.	To United States Express Co., service.....	18 54
"	6.	To Indiana Press Clipping Service, clippings	10 00
"	6.	To Interstate Med. Journal Co., subscription	2 00
"	6.	To The Scarborough Co., map.....	1 95
"	6.	To W. K. Stewart Co., books.....	10 35
"	6.	To The Survey, subscription .....	3 00
"	6.	To Central Union Telephone Co., tolls.....	2 65
"	6.	To Indianapolis Telephone Co., tolls.....	4 35
"	6.	To Western Union Telegraph Co., tolls.....	1 17
"	6.	To J. L. Anderson, expense.....	2 60
"	12.	To R. E. Springsteen, P. M., postage stamps.	100 00
"	31.	To Dr. W. F. King, salary.....	208 34
"	31.	To J. L. Anderson, salary.....	125 00
"	31.	To Ethel Hoffman, salary .....	60 00
"	31.	To Louise Lingenfelter, salary .....	60 00
"	31.	To Fannie Stevenson, salary .....	60 00
"	31.	To Sadye Slutzky, salary .....	50 00
"	31.	To Lucetta Lee, salary .....	50 00
"	31.	To Elva Schweitzer, salary .....	50 00
"	31.	To Nelle Rollison, salary .....	36 54
"	31.	To Ethel McDaniel, salary .....	52 00
"	31.	To Fred Ebert, salary .....	40 00
Apr.	6.	To American Toilet Supply Co., laundry....	5 55
"	6.	To Aquos Dist. Water Co., merchandise.....	3 00
"	6.	To Balke & Krauss Co., merchandise.....	19 80
"	6.	To W. H. Bass Photo Co., merchandise.....	40
"	6.	To A. W. Bruner, expense.....	17 70
"	6.	To Fred Ebert, expense .....	50 45
"	6.	To Dr. W. F. King, expense.....	23 90
"	6.	To Adams Express Co., service.....	75
"	6.	To American Express Co., service.....	1 26
"	6.	To United States Express Co., service.....	1 15
"	6.	To Indiana Press Clipping Service, clippings	10 00
"	6.	Ind. Engraving and Electrotyping Co.....	1 62
"	6.	To The Journal of Med. Research, subscrip- tion .....	4 00

1914.

Apr. 6.	To The Journal of Outdoor Life, 2 years subscription .....	\$2 00
" 6.	To George Kleine, merchandise .....	58 10
" 6.	To J. L. Massena, merchandise .....	7 60
" 6.	To Remington Typewriter Co. ....	7 50
" 6.	To W. K. Stewart Co., books .....	2 90
" 6.	To Central Union Telephone Co., rental .....	23 50
" 6.	To Postal Telegraph Cable Co., tolls .....	40
" 6.	To Western Union Telegraph Co., tolls .....	1 45
" 6.	To J. L. Anderson, expense .....	4 74

Total expense second quarter .....

\$3,533 57

Apr. 10.	To Dr. T. Henry Davis, board meeting .....	\$2 75
" 10.	To Dr. Jas. S. Boyers, board meeting .....	18 37
" 10.	To Dr. H. H. Sutton, board meeting .....	4 80
" 20.	To Fred Ebert, salary and expense .....	63 06
" 30.	To Dr. W. F. King, salary .....	208 33
" 30.	To J. L. Anderson, salary .....	125 00
" 30.	To Ethel Hoffman, salary .....	60 00
" 30.	To Louise Lingenfelter, salary .....	60 00
" 30.	To Fannie Stevenson, salary .....	60 00
" 30.	To Adah L. Kendall, salary .....	60 00
" 30.	To Sadye Slutzky, salary .....	50 00
" 30.	To Lucetta Lee, salary .....	50 00
" 30.	To Elva Schweitzer, salary .....	50 00
" 30.	To Nelle Rollison, salary .....	50 00
" 30.	To Ethel McDaniel, salary .....	52 00
May 7.	To Addressograph Co., merchandise .....	8 59
" 7.	To Aquos Dist. Water Co., merchandise .....	4 00
" 7.	To W. H. Bass Photo Co., merchandise .....	15 70
" 7.	To Wm. B. Burford, merchandise .....	1,554 10
" 7.	To Adams Express Co., service .....	5 00
" 7.	To American Express Co., service .....	3 88
" 7.	To Guide Publishing Co., subscription .....	2 00
" 7.	To Indiana Electrotype Co., merchandise .....	6 00
" 7.	To Indiana Press Clipping Service, clippings .....	10 00
" 7.	To Indianapolis Eng. and Electrotyping Co., merchandise .....	16 70
" 7.	To H. Lieber Co., merchandise .....	16 00
" 7.	To N. P. Standish, merchandise .....	6 25
" 7.	To W. K. Stewart Co. ....	5 10
" 7.	To Central Union Telephone Co., tolls .....	2 55
" 7.	To Indianapolis Telephone Co., tolls .....	25 20
" 7.	To Horace F. Wood, Transfer Co., livery .....	2 00
" 7.	To Dr. W. F. King, expense .....	31 00
" 7.	To J. L. Anderson, expense .....	10 42
" 7.	To Railroad Transfer Co., drayage .....	1 50
" 7.	To Dr. J. N. Hurty, expense .....	187 18
" 7.	To George Kleine, merchandise .....	106 34

1914.

May 14.	To R. E. Springsteen, P. M., postage stamps	\$150 00
" 27.	To Dr. T. Henry Davis, health officers' conference and expense.....	12 75
" 27.	To Dr. Jas. S. Boyers, health officers' conference and expense .....	29 30
" 27.	To Dr. H. H. Sutton, health officers' conference and expense .....	30 85
" 27.	To Dr. J. L. Freeland, health officers conference and expense .....	20 00
" 31.	To Dr. W. F. King, salary.....	208 33
" 31.	To J. L. Anderson, salary.....	125 00
" 31.	To Ethel Hoffman, salary .....	60 00
" 31.	To Louise Lingenfelter, salary .....	60 00
" 31.	To Fannie Stevenson, salary .....	60 00
" 31.	To Adah L. Kendall, salary .....	60 00
" 31.	To Sadye Slutzky, salary .....	50 00
" 31.	To Lucetta Lee, salary.....	50 00
" 31.	To Elva Schweitzer, salary .....	50 00
" 31.	To Nelle Rollison, salary.....	50 00
" 31.	To Ethel McDaniel, salary .....	48 00
" 31.	To George M. King, salary.....	20 00
June 6.	To Addressograph Co., merchandise .....	1 22
" 6.	To American Academy of Medicine, books..	14 00
" 6.	To American Medical Assn., directory .....	7 00
" 6.	To American Medical Pub. Co., journal.....	1 00
" 6.	To Aquos Dist. Water Co., merchandise....	3 00
" 6.	To W. B. Burford, merchandise.....	1,171 16
" 6.	To Dr. C. A. Carter, expense.....	11 55
" 6.	To Columbia School Supply Co., expense...	7 45
" 6.	To Adams Express Co., service.....	54
" 6.	To American Express Co., service.....	1 43
" 6.	To Fertig & Keevers, signs.....	1 00
" 6.	To E. & C. Film Mfg. Co., one film.....	200 00
" 6.	To Indiana Paper Co., merchandise.....	75
" 6.	To Ind. Press Clipping Service, clippings...	10 00
" 6.	To Indianapolis Tent and Awning Co., labor	1 00
" 6.	To Walter Isnogle, service.....	10 00
" 6.	Purveyer & Porter, freight and drayage....	6 20
" 6.	To Row, Peterson & Co., book.....	2 49
" 6.	To Central Union Telephone Co., tolls.....	5 25
" 6.	To Indianapolis Telephone Co., tolls.....	4 05
" 6.	To H. W. Vietmeyer, T. W. tolls.....	10 00
" 6.	To R. B. VonKleinsmid, D. D., service.....	9 45
" 6.	To Dr. W. F. King, expense.....	101 67
" 6.	To George M. King, expense.....	5 70
" 6.	To J. L. Anderson, expense.....	14 72
" 13.	To George M. King, expense.....	22 71
" 29.	To Geo. M. King, expense.....	48 74
" 30.	To Dr. W. F. King, salary.....	208 34
" 30.	To J. L. Anderson, salary.....	125 00

1914.

June 20.	To Ethel Hoffman, salary .....	\$60 00
" 30.	To Louise Lingenfelter, salary .....	60 00
" 30.	To Fannie Stevenson, salary .....	60 00
" 30.	To Adah L. Kendall, salary .....	60 00
" 30.	To Sadye Slutzky, salary .....	50 00
" 30.	To Lucetta Lee, salary .....	50 00
" 30.	To Elva Schweitzer, salary .....	50 00
" 30.	To Nelle Rollison, salary .....	50 00
" 30.	To Geo. M. King, salary .....	50 00
July 7.	To American Toilet Supply Co., laundry....	5 55
" 7.	To Aquos Dist. Water Co., merchandise....	4 00
" 7.	To American Academy of Med., balance ac- count .....	4 00
" 7.	To American School of Hygiene Assn., dues.	3 00
" 7.	To W. B. Burford, merchandise.....	105 02
" 7.	To Adams Express Co., service.....	2 10
" 7.	To American Express Co., service.....	8 13
" 7.	To Ind. Press Clipping Service, clippings...	10 00
" 7.	To Wm. H. Baldwin, Treas. Nat. Assn. S. & P. of T. B., dues.....	5 00
" 7.	To Puryear & Porter, freight and drayage..	2 30
" 7.	To Railroad Transfer Co., freight and dray- age .....	99
" 7.	To Indianapolis Telephone Co., tolls.....	50
" 7.	To Western Union Telegraph Co., tolls....	5 21
" 7.	To Dr. W. F. King, expense.....	14 75
" 7.	To Dr. Geo. Keiper, services.....	10 00
" 7.	To J. H. Landis, M. D., services.....	20 00
" 7.	To Dr. Felix G. Thornton, services.....	5 00
" 7.	To Dr. C. A. Zinn, services.....	20 00
" 7.	To Henry W. Lawson, hotel bill.....	11 00
" 7.	To The H. Lieber Co., merchandise.....	59
" 7.	To J. L. Anderson, expense.....	3 45

Total expense third quarter..... \$6,752 06

July 10.	To Dr. T. Henry Davis, board meeting.....	\$3 25
" 10.	To Dr. Jas. S. Boyers, expense and board meeting .....	53 05
" 10.	To Dr. H. H. Sutton, expense and board- meeting .....	74 55
" 13.	To Geo. M. King, expense.....	35 55
" 16.	To R. E. Springsteen, P. M., postage stamps.	150 00
" 20.	To Geo. M. King, expense.....	37 85
" 20.	To Dr. J. N. Hurty, expense.....	153 09
" 31.	To Dr. W. F. King, salary.....	208 33
" 31.	To J. L. Anderson, salary.....	125 00
" 31.	To Ethel Hoffman, salary .....	60 00
" 31.	To Louise Lingenfelter, salary .....	60 00
" 31.	To Fannie Stevenson, salary .....	60 00

1914.

July	31.	To Adah L. Kendall, salary.....	\$60 00
"	31.	To Sadye Slutzky, salary .....	60 00
"	31.	To Lucetta C. Lee, salary.....	50 00
"	31.	To Elva Schweitzer, salary.....	50 00
"	31.	To Nelle Rollison, salary .....	50 00
"	31.	To George M. King, salary.....	50 00
Aug.	7.	To Aquos Dist. Water Co., merchandise....	4 25
"	7.	To W. B. Burford, merchandise.....	200 31
"	7.	To Adams Express Co., service.....	13 21
"	7.	To American Express Co., service.....	50
"	7.	To Ind. Press Clipping Service, clippings....	10 00
"	7.	To Indianapolis Calcium Light Co., mer- chandise .....	4 25
"	7.	To Indianapolis Electric Supply Co., one fan	14 75
"	7.	To E. & C. Film Co., one film.....	232 40
"	7.	To W. K. Stewart Co., books.....	11 10
"	7.	To Receivers Cent. Union Tel. Co., rent and tolls .....	19 30
"	7.	To Indianapolis Telephone Co., rent and tolls	23 80
"	7.	To Weder Mfg. Co., merchandise.....	6 00
"	7.	To J. L. Anderson, expense.....	7 70
"	7.	To Dr. W. F. King, expense.....	100 40
"	7.	To Geo. M. King, expense.....	43 00
"	13.	To Ben Strickland, labor .....	15 45
"	17.	To Geo. M. King, expense.....	54 65
"	31.	To Dr. W. F. King, salary.....	208 33
"	31.	To J. L. Anderson, salary.....	125 00
"	31.	To Ethel Hoffman, salary.....	60 00
"	31.	To Louise Lingenfelter, salary .....	60 00
"	31.	To Fannie Stevenson, salary .....	60 00
"	31.	To Adah L. Kendall, salary.....	60 00
"	31.	To Sadye Slutzky, salary .....	60 00
"	31.	To Lucetta C. Lee, salary .....	50 00
"	31.	To Elva Schweitzer, salary .....	50 00
"	31.	To Nelle Rollison, salary .....	50 00
"	31.	To Geo. M. King, salary .....	50 00
Sept.	3.	To R. E. Springsteen, P. M., postage stamps.	150 00
"	7.	To Aquos Dist. Water Co., merchandise....	3 00
"	7.	To American Multigraph Sales Co.....	75
"	7.	To Dr. Hugh A. Cowing, service.....	10 00
"	7.	To Adams Express Co., service.....	3 52
"	7.	To American Express Co., service.....	16 79
"	7.	To Wells-Fargo Express Co., service.....	4 76
"	7.	To Ind. Press Clipping Service, clippings....	10 00
"	7.	To Lea & Febiger, book.....	4 28
"	7.	To Receivers Cent. Union Telephone Co., tolls .....	7 70
"	7.	To George M. King, expense.....	24 00
"	7.	To J. L. Anderson, expense.....	12 84
"	7.	To The H. Lieber Co., merchandise.....	50

1914.		
Sept. 7.	To C. R. Anderson, labor.....	\$42 00
" 7.	To Dr. W. F. King, expense.....	25 85
" 7.	To Western Union Telegraph Co., tolls.....	3 19
" 15.	To C. R. Anderson, expense and labor.....	18 05
" 15.	To Theodore Boyer, watchman .....	28 00
" 15.	To George M. King, expense and salary.....	58 50
" 29.	To J. L. Anderson, expense.....	20 43
" 29.	To C. R. Anderson, labor.....	17 00
" 29.	To Dr. J. N. Hurty, expense.....	34 55
" 29.	To Dr. C. A. Carter, expense.....	2 50
" 29.	To Dr. W. F. King, expense.....	17 60
" 29.	To American Multigraph Sales Co., merchan- dise .....	1 50
" 29.	To American Toilet Supply Co., laundry....	5 55
" 29.	To Aquos Dist. Water Co., merchandise.....	3 75
" 29.	To W. H. Bass Photo Co., merchandise.....	2 00
" 29.	To W. B. Burford, merchandise.....	700 05
" 29.	To Adams Express Co., service.....	80
" 29.	To American Express Co., service.....	70
" 29.	To Wells-Fargo Express Co., service.....	7 59
" 29.	To Fertig & Keevers, merchandise.....	1 00
" 29.	To Indiana Electrotpe Co., merchandise....	16 65
" 29.	To Fulton Office Furniture Co., chair.....	11 25
" 29.	To Indiana Press Clipping Service, clippings	10 00
" 29.	To Indianapolis Calcium Light Co., repairs and merchandise .....	39 00
" 29.	To Indianapolis Tent and Awning Co., mer- chandise .....	6 60
" 29.	To Indianapolis Telephone Co., tolls.....	1 35
" 29.	To The H. Lieber Co., merchandise.....	5 40
" 29.	To W. K. Stewart Co., books.....	10 50
" 29.	To H. P. Wasson Co., merchandise.....	3 00
" 29.	To Western Union Telegraph Co., tolls.....	4 00
" 29.	To W. S. Frye Transfer, hauling.....	6 00
" 30.	To Dr. W. F. King, salary.....	208 34
" 30.	To J. L. Anderson, salary.....	125 00
" 30.	To Ethel Hoffman, salary .....	60 00
" 30.	To Louise Lingenfelter, salary .....	60 00
" 30.	To Fannie Stevenson, salary .....	60 00
" 30.	To Sadye Slutzky, salary .....	60 00
" 30.	To Lucetta Lee, salary .....	50 00
" 30.	To Elva Schweitzer, salary .....	50 00
" 30.	To Nelle Rollison, salary .....	50 00
Total expense fourth quarter.....		\$5,010 35
Appropriation .....		\$20,000 00
Expense .....		19,841 81
Balance reverting to general fund.		\$158 19

## INDIANA STATE BOARD OF HEALTH—LABORATORY OF HYGIENE.

*For Fiscal Year October 1, 1913, to September 30, 1914.*

1913.	
Oct. 21.	To Dugan-Johnson Co., merchandise..... \$27 52
" 21.	To Kimble Durand Glass Co., merchandise.. 87 38
" 21.	To Lamp Equipment Works, vacuum pump and hose ..... 48 75
" 21.	To Pettis Drygoods Co., merchandise..... 11 98
" 21.	To Remington Typewriter Co., ribbon..... 75
" 21.	To E. H. Sargent & Co., merchandise..... 15 00
" 21.	To G. E. Stechert & Co., journals..... 8 85
" 21.	To Ward Bros. Drug Co., merchandise..... 33 75
" 31.	To Dr. Will Shimer, salary..... 166 66
" 31.	To Dr. Ada E. Schweitzer, salary..... 125 00
" 31.	To Dr. L. W. Barry, salary..... 125 00
" 31.	To Miss H. M. Hooker, salary..... 60 00
" 31.	To Robt. P. Johnson, salary..... 75 00
" 31.	To George M. King, salary..... 30 00
Nov. 6.	To J. L. Anderson, expense..... 9 00
" 6.	To Dr. Will Shimer, expense..... 6 90
" 6.	To Dr. L. W. Barry, expense..... 3 80
" 6.	To W. B. Burford, merchandise..... 29 28
" 6.	To Dugan-Johnson Co., merchandise..... 14 40
" 6.	To The Francis Pharmacy Co., merchandise 33 39
" 6.	To Adams Express Co., service..... 2 70
" 6.	To American Express Co., service..... 2 15
" 6.	To National Express Co., service..... 3 75
" 6.	To Railroad Transfer Co., freight and dray- age ..... 50 98
" 6.	To G. E. Stechert & Co., journals..... 2 82
" 6.	To W. K. Stewart Co., books..... 16 50
" 6.	To Western Union Telegraph Co., tolls.... 85
" 6.	To Aquos Dist. Water Co., merchandise..... 3 00
" 6.	To Indiana Reduction Co., service..... 13 50
" 15.	To R. E. Springsteen, postage stamps..... 50 00
" 30.	To Dr. Will Shimer, salary..... 166 66
" 30.	To Dr. Ada E. Schweitzer, salary..... 125 00
" 30.	To Dr. L. W. Barry, salary..... 125 00
" 30.	To Miss H. M. Hooker, salary..... 60 00
" 30.	To Robt. P. Johnson, salary..... 75 00
" 30.	To Geo. M. King, salary..... 30 00
Dec. 6.	To American Med. Pub. Co., subscription... 1 00
" 6.	To Dugan-Johnson Co., merchandise..... 14 40
" 6.	To Adams Express Co., service..... 50
" 6.	To American Express Co., service..... 2 05
" 6.	To National Express Co., service..... 25
" 6.	To Henry Hell Chemical Co., merchandise.. 6 00
" 6.	To Improved Mailing Case Co., merchandise 1,553 12



1913.		
Dec.	6.	To Journal Med. Research, subscription.... \$4 00
"	6.	To Pettis Dry Goods Co., merchandise..... 8 55
"	6.	To Railroad Transfer Co., freight and dray- age ..... 6 97
"	6.	To Remington Typewriter Co., adjusting.... 50
"	6.	To Central Union Telephone Co., tolls..... 1 90
"	6.	To J. L. Anderson, expense..... 7 95
"	31.	To Dr. Will Shimer, salary..... 166 67
"	31.	To Dr. Ada E. Schweitzer, salary..... 125 00
"	31.	To Dr. L. W. Barry, salary..... 125 00
"	31.	To Miss H. M. Hooker, salary..... 60 00
"	31.	To Robt. P. Johnson, salary..... 75 00
"	31.	To George M. King, salary..... 30 00
1914.		
Jan.	14.	To Am. Toilet Supply Co., laundry..... 34 30
"	14.	To Bausch & Lomb Optical Co., merchandise 21 10
"	14.	To W. B. Burford, merchandise..... 5 40
"	14.	To Adams Express Co., service..... 1 20
"	14.	To American Express Co., service..... 75
"	14.	To The Johns Hopkins Press, subscription.. 2 00
"	14.	To Longmans, Green & Co., textbook..... 10 80
"	14.	To Pettis Dry Goods Co., merchandise..... 3 02
"	14.	To Railroad Transfer Co., freight and dray- age ..... 3 03
"	14.	To Remington Typewriter Co., one machine. 61 95
"	14.	To Spencer Lens Co., merchandise..... 191 70
"	14.	To W. K. Stewart Co., merchandise..... 1 50
"	14.	To Whotall Tutum Co., merchandise..... 116 17
"	14.	To Dr. Ada E. Schweitzer, expense..... 80 10
"	14.	To Dr. K. W. Hidy, salary..... 41 67
"	14.	To J. L. Anderson, expense..... 16 40

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Total expense first quarter..... \$4,420 27

Jan.	31.	To Dr. Will Shimer, salary..... \$166 66
"	31.	To Dr. Ada E. Schweitzer, salary..... 125 00
"	31.	To Dr. L. W. Barry, salary..... 125 00
"	31.	To Miss H. M. Hooker, salary..... 60 00
"	31.	To Robt. P. Johnson, salary..... 75 00
"	31.	To Geo. M. King, salary..... 30 00
Feb.	9.	To Aquos Dist. Water Co., merchandise..... 1 50
"	9.	To W. H. Bass Photo Co., merchandise..... 1 20
"	9.	To W. B. Burford, merchandise..... 11 48
"	9.	To Columbia Grocery Store, merchandise... 1 75
"	9.	To Adams Express Co., service..... 50
"	9.	To American Express Co., service..... 75
"	9.	To J. B. Lippincott Co., book..... 1 50
"	9.	To Railroad Transfer Co., freight and dray- age ..... 4 77
"	9.	To Remington Typewriter Co., ribbon..... 75

1914.		
Feb.	9.	To The Rockefeller Institute, books..... \$5 00
"	9.	To Dr. Will Shimer, expense..... 5 40
"	17.	To Dr. Will Shimer, expense..... 11 80
"	17.	To W. B. Saunders Co., book..... 5 50
"	17.	To Journal Infectious Disease, subscription. 5 00
"	17.	To G. E. Stechert Co., subscription..... 25 00
"	26.	To R. E. Springsteen, P. M., postage stamps. 75 00
"	28.	To Dr. Will Shimer, salary ..... 166 67
"	28.	To Dr. Ada E. Schweitzer, salary..... 125 00
"	28.	To Miss H. M. Hooker, salary..... 60 00
"	28.	To Miss Talitha Gerlach, salary..... 40 00
"	28.	To Robt. P. Johnson, salary..... 75 00
"	28.	To George M. King, salary..... 30 00
Mar.	6.	To Aquos Dist. Water Co., merchandise..... 2 00
"	6.	To Amer. Med. Assn., journal..... 12 00
"	6.	To W. B. Burford, merchandise..... 26 65
"	6.	To Adams Express Co., service..... 25
"	6.	To American Express Co., service..... 50
"	6.	To United States Express Co., service..... 80
"	6.	To Remington Typewriter Co., merchandise. 7 00
"	6.	To G. E. Stechert & Co., journals..... 14 59
"	6.	To Dr. Will Shimer, expense..... 5 35
"	6.	To J. L. Anderson, expense..... 6 85
"	31.	To Dr. Will Shimer, salary..... 166 67
"	31.	To Dr. Ada Schweitzer, salary..... 125 00
"	31.	To Miss H. M. Hooker, salary..... 60 00
"	31.	To Miss Talitha Gerlach, salary..... 40 00
"	31.	To Robt. P. Johnson, salary..... 75 00
"	31.	To Geo. M. King, salary..... 30 00
Apr.	6.	To American Toilet Supply Co., laundry.... 34 15
"	6.	To American Journal of Public Health, sub- scription ..... 2 40
"	6.	To Bausch & Lomb Optical Co., merchandise 2 25
"	6.	To P. Blakison's Sons Co., books..... 7 50
"	6.	To Adams Express Co., service..... 75
"	6.	To The Eli Lilly Co., merchandise..... 5 00
"	6.	To Dr. Will Shimer, expense..... 11 10
"	6.	To Dr. Ada E. Schweitzer, expense..... 3 70
"	6.	To G. E. Stechert & Co., journals..... 8 00
"	6.	To J. L. Anderson, expense..... 8 35
"	6.	To Western Union Telegraph Co., tolls..... 2 85

Expense second quarter..... \$1,893 94

Apr.	30.	To Dr. Will Shimer, salary..... \$166 66
"	30.	To Dr. Ada E. Schweitzer, salary..... 125 00
"	30.	To Miss H. M. Hooker, salary..... 60 00
"	30.	To Miss Talitha Gerlach, salary..... 40 00
"	30.	To Robt. P. Johnson, salary..... 75 00
"	30.	To Geo. M. King, salary..... 30 00

1914.		
May	7.	To Aquos Dist. Water Co., merchandise.... \$2 25
"	7.	To W. B. Burford, merchandise..... 9 75
"	7.	To Adams Express Co., service..... 26
"	7.	To American Express Co., service..... 44
"	7.	To Indianapolis Tent and Awning Co., serv- ice ..... 1 50
"	7.	To Lilly & Stalnaker, merchandise..... 4 65
"	7.	To Ernst Leitz, merchandise..... 14 49
"	7.	To Dr. Ada E. Schweitzer, expense..... 2 45
"	7.	To G. E. Stechert & Co., books..... 18 17
"	7.	To J. L. Anderson, expense..... 3 75
"	7.	To Western Union Telegraph Co., tolls..... 1 84
"	31.	To Dr. Will Shimer, salary..... 166 67
"	31.	To Dr. Ada E. Schweitzer, salary..... 125 00
"	31.	To Miss Hervy M. Hooker, salary..... 60 00
"	31.	To Miss Talitha Gerlach, salary..... 40 00
"	31.	To Robt. P. Johnson, salary..... 75 00
"	31.	To Geo. M. King, salary..... 30 00
June	6.	To American Pub. Health Assn., dues..... 3 00
"	6.	To W. B. Burford, merchandise..... 156 94
"	6.	To American Express Co., service..... 2 71
"	6.	To J. C. Hart Co., merchandise..... 3 50
"	6.	To Ind. Reduction Co., service..... 3 00
"	6.	To J. B. Lippincott Co., book..... 2 00
"	6.	To Ernst Leitz, repairs..... 2 18
"	6.	To G. E. Stechert & Co., books..... 4 00
"	6.	To Dr. Will Shimer, expense..... 23 15
"	6.	To Dr. Ada E. Schweitzer, expense..... 9 36
"	6.	To J. L. Anderson, expense..... 6 80
"	9.	To R. E. Springsteen, P. M., postage stamps. 100 00
"	30.	To Dr. Will Shimer, salary..... 166 67
"	30.	To Dr. Ada E. Schweitzer, salary..... 125 00
"	30.	To Miss H. M. Hooker, salary..... 60 00
"	30.	To Miss Talitha Gerlach, salary..... 40 00
"	30.	To Robt. P. Johnson, salary..... 75 00
July	7.	To Aquos Dist. Water Co., merchandise.... 2 00
"	7.	To American Toilet Supply Co., laundry.... 40 20
"	7.	To American Med. Assn., reprints..... 4 00
"	7.	To Bausch & Lomb Optical Co., service.... 8 00
"	7.	To Adams Express Co., service..... 25
"	7.	To Harmon & Hall, merchandise..... 3 00
"	7.	To Indiana Reduction Co., service..... 13 50
"	7.	To Indianapolis Elec. Supply Co., 2 fans.... 14 00
"	7.	To Indianapolis Tent & Awning Co., repairs 50
"	7.	To G. E. Stechert & Co., journals..... 12 85
"	7.	To Wm. Wood & Co., books..... 11 25
"	7.	To Dr. Will Shimer, expense..... 100 60
"	7.	To J. L. Anderson, expense..... 8 85

Total third quarter.....

\$2,055 29

1914.		
July 31.	To Dr. Will Shimer, salary.....	\$166 66
" 31.	To Dr. Ada E. Schweitzer, salary.....	125 00
" 31.	To Miss Hervy M. Hooker, salary.....	60 00
" 31.	To Miss Talitha Gerlach, salary.....	40 00
" 31.	To Robt. P. Johnson, salary.....	75 00
Aug. 7.	To Aquos Dist. Water Co., merchandise....	2 00
" 7.	To Paul Hoeber, book.....	4 75
" 7.	To Indianapolis Elec. Supply Co., 1 fan....	7 00
" 7.	To G. E. Stechert & Co., journals.....	10 10
" 7.	To J. L. Anderson, expense.....	8 26
" 31.	To Dr. Will Shimer, salary.....	166 67
" 31.	To Dr. Ada E. Schweitzer, salary.....	125 00
" 31.	To Miss Hervy Hooker, salary.....	60 00
" 31.	To Miss Talitha Gerlach, salary.....	40 00
" 31.	To Robt. J. Johnson, salary.....	75 00
Sept. 7.	To J. L. Anderson, expenses.....	6 59
" 7.	To Aquos Dist. Water Co., merchandise....	2 00
" 7.	To Cent. Union Tel. Co., tolls.....	1 15
" 7.	To Lea & Febiger, book.....	3 75
" 7.	To H. K. Mulford Co., merchandise.....	6 00
" 7.	To W. P. Shropshire, salary and expenses..	49 80
" 7.	To Vonnegut Hardware Co., merchandise..	2 50
" 7.	To Weber Drug Co., merchandise.....	1 00
" 28.	To L. S. Ayres, merchandise.....	70
" 28.	To American Tollet Supply, laundry.....	28 47
" 28.	To W. B. Burford, merchandise.....	53 08
" 28.	To Adams Express Co., service.....	1 00
" 28.	To American Express Co., service.....	83
" 28.	To E. H. Sargent Co., merchandise.....	8 40
" 28.	To G. E. Stechert & Co., journals.....	5 75
" 28.	To Dr. Will Shimer, expense.....	4 83
" 28.	To Dr. Ada E. Schweitzer, expense.....	6 00
" 30.	To Dr. Will Shimer, salary.....	166 67
" 30.	To Dr. Ada E. Schweitzer, salary.....	125 00
" 30.	To Miss Hervy M. Hooker, salary.....	60 00
" 30.	To Miss Talitha Gerlach, salary.....	40 00
" 30.	To Robt. P. Johnson, salary.....	75 00
" 30.	To Geo. M. King, one-half month's salary....	15 00
Total expense fourth quarter.....		\$1,628 94

## RECAPITULATION.

Appropriation .....	\$10,000 00
Expense first quarter .....	\$4,420 27
Expense second quarter .....	1,893 94
Expense third quarter.....	2,055 20
Expense fourth quarter .....	1,628 94
Total .....	\$9,998 44
Balance reverting to general fund.....	\$1 56

## PURE FOOD AND DRUG LABORATORY.

*For Fiscal Year Beginning October 1, 1913, and Ending September 30, 1914.*

1913.		
Oct.	31.	To H. E. Barnard, salary..... \$208 33
"	31.	To H. E. Bishop, salary..... 150 00
"	31.	To W. D. McAbee, salary..... 150 00
"	31.	To J. C. Diggs, salary..... 115 66
"	31.	To Floyd Huff, salary..... 30 00
"	31.	To A. W. Bruner, salary..... 125 00
"	31.	To B. W. Cohn, salary..... 125 00
"	31.	To F. W. Tucker, salary..... 125 00
"	31.	To C. L. Hutchens, salary..... 100 00
"	31.	To Richard White, salary..... 100 00
"	31.	To Jas. L. Anderson, salary..... 8 33
"	31.	To Miss Gail M. Stapp, salary..... 48 00
Nov.	7.	To H. E. Barnard, expense..... 37 35
"	7.	To A. W. Bruner, expense..... 56 50
"	7.	To B. W. Cohn, expense..... 21 37
"	7.	To F. W. Tucker, expense..... 78 60
"	7.	To C. L. Hutchens..... 43 55
"	7.	To Richard White, expense..... 41 35
"	7.	To Balke & Krauss Co., merchandise..... 3 18
"	7.	To W. B. Burford, merchandise..... 174 01
"	7.	To Edward M. Holloway, abstract..... 5 00
"	7.	To A. Kiefer Drug Co., merchandise..... 12 55
"	7.	To W. K. Stewart Co., books..... 5 25
"	7.	To Adams Express Co., service..... 35
"	7.	To American Express Co., service..... 1 15
"	7.	To National Express Co., service..... 50
"	7.	To United States Express Co., service..... 35
"	7.	To Pittman-Myers Co., service..... 12 42
"	30.	To H. E. Barnard, salary..... 208 33
"	30.	To H. E. Bishop, salary..... 150 00
"	30.	To W. D. McAbee, salary..... 150 00
"	30.	To J. C. Diggs, salary..... 116 66
"	30.	To Floyd Huff, salary..... 30 00
"	30.	To A. W. Bruner, salary..... 125 00
"	30.	To B. W. Cohn, salary..... 125 00
"	30.	To F. W. Tucker, salary..... 125 00
"	30.	To C. L. Hutchens, salary..... 100 00
"	30.	To Richard White, salary..... 100 00
"	30.	To Miss Gail M. Stapp, salary..... 48 00
"	30.	To J. L. Anderson, salary..... 8 33
Dec.	6.	To Baker & Co., Inc., merchandise..... 10 74
"	6.	To Central Supply Co., merchandise..... 56
"	6.	To Dewald & Wahl, merchandise..... 13 00
"	6.	To Adams Express Co., service..... 3 85
"	6.	To American Express Co., service..... 65
"	6.	To The H. Lieber Co., merchandise..... 80

## 1914.

Dec. 6.	To Pittman-Myers Co., merchandise.....	\$69 95
" 6.	To Vonnegut Hardware Co., merchandise....	6 30
" 6.	To W. U. Telegraph Co., tolls.....	37
" 6.	To H. E. Barnard, expense.....	72 95
" 6.	To A. W. Bruner, expense.....	43 60
" 6.	To B. W. Cohn.....	22 65
" 6.	To F. W. Tucker, expense.....	48 81
" 6.	To C. L. Hutchens.....	53 13
" 6.	To Richard White .....	43 50
" 15.	To Robt. E. Springsteen, P. M., stamps.....	100 00
" 31.	To H. E. Barnard, salary.....	208 34
" 31.	To H. E. Bishop, salary.....	150 00
" 31.	To W. D. McAbee, salary.....	150 00
" 31.	To J. C. Diggs, salary.....	116 67
" 31.	To Floyd Huff, salary.....	30 00
" 31.	To A. W. Bruner, salary.....	125 00
" 31.	To B. W. Cohn, salary.....	125 00
" 31.	To F. W. Tucker, salary.....	125 00
" 31.	To C. L. Hutchens, salary.....	100 00
" 31.	To Richard White, salary.....	100 00
" 31.	To Miss Gail M. Stapp, salary.....	48 00
" 31.	To J. L. Anderson, salary.....	8 34

## 1914.

Jan. 14.	To H. E. Barnard, expense.....	21 33
" 14.	To A. W. Bruner, expense.....	29 25
" 14.	To B. W. Cohn, expense.....	48 11
" 14.	To F. W. Tucker, expense.....	64 51
" 14.	To C. L. Hutchens, expense.....	57 75
" 14.	To Richard White, expense.....	61 15
" 14.	To American Toilet Supply Co., laundry....	3 75
" 14.	To Brydon Bros., labor and materials.....	68 13
" 14.	To Adams Express Co., service.....	3 00
" 14.	To American Express Co., service.....	30
" 14.	To United States Express Co., service.....	1 90
" 14.	To B. H. Herman & Co., merchandise.....	5 10
" 14.	To Frank H. Prunk, merchandise.....	3 30
" 14.	To W. K. Stewart Co., books.....	11 50
" 14.	To Western Union Teleraph Co., tolls.....	1 33

Expense first quarter.....

\$5,223 74

Jan. 31.	To H. E. Barnard, salary.....	\$208 33
" 31.	To H. E. Bishop, salary.....	150 00
" 31.	To W. D. McAbee, salary.....	150 00
" 31.	To J. C. Diggs, salary.....	116 67
" 31.	To Floyd Huff, salary.....	30 00
" 31.	To Miss Gail M. Stapp, salary.....	75 00
" 31.	To A. W. Bruner, salary.....	125 00
" 31.	To B. W. Cohn, salary.....	125 00
" 31.	To F. W. Tucker, salary.....	125 00

1914.		
Jan.	31.	To C. L. Hutchens, salary..... \$100 00
"	31.	To Richard White, salary..... 100 00
"	31.	To J. L. Anderson, salary..... 8 33
Feb.	9.	To A. W. Bruner, expense..... 54 70
"	9.	To B. W. Cohn, expense..... 16 83
"	9.	To F. W. Tucker, expense..... 64 37
"	9.	To C. L. Hutchens, expense..... 52 79
"	9.	To Richard White, expense..... 44 50
"	9.	To H. E. Bishop, expense..... 13 34
"	9.	To W. C. & T. B. Brydon, drawings..... 10 00
"	9.	To Adams Express Co., service..... 2 30
"	9.	To American Express Co., service..... 1 90
"	9.	To Mack Carpet & Rug Co., merchandise... 1 25
"	9.	To Frank H. Prunk, merchandise..... 1 68
"	9.	To Western Union Telegraph Co., tolls..... 1 15
"	9.	To Scientific Materials Co., merchandise... 21 77
"	28.	To H. W. Barnard, salary..... 208 33
"	28.	To H. E. Bishop, salary..... 150 00
"	28.	To W. D. McAbee, salary..... 150 00
"	28.	To J. C. Diggs, salary..... 116 67
"	28.	To Floyd Huff..... 30 00
"	28.	To Miss Gail M. Stapp, salary..... 75 00
"	28.	To A. W. Bruner, salary..... 125 00
"	28.	To B. W. Cohn, salary..... 125 00
"	28.	To F. W. Tucker, salary..... 125 00
"	28.	To C. L. Hutchins, salary..... 100 00
"	28.	To Richard White, salary..... 100 00
"	28.	To J. L. Anderson, salary..... 8 33
Mar.	6.	To H. E. Barnard, expense..... 5 44
"	6.	To A. W. Bruner, expense..... 45 78
"	6.	To B. W. Cohn, expense..... 11 20
"	6.	To F. W. Tucker, expense..... 36 95
"	6.	To C. L. Hutchens, expense..... 34 00
"	6.	To Richard White, expense..... 35 85
"	6.	To W. H. Block Co., merchandise..... 14 66
"	6.	To The Druggists Circular, subscription.... 2 00
"	6.	To Adams Express Co., service..... 1 20
"	6.	To American Express Co., service..... 50
"	6.	To Pittman-Myers Co., merchandise..... 27 37
"	6.	To W. K. Stewart Co., books..... 12 60
"	6.	To G. E. Stechert & Co., books..... 18 85
"	6.	To Central Union Telephone Co., tolls..... 1 90
"	6.	To Indianapolis Telephone Co., tolls..... 1 20
"	12.	To R. E. Springsteen P. M., stamps..... 75 00
"	31.	To H. E. Barnard, salary..... 208 34
"	31.	To H. E. Bishop, salary..... 150 00
"	31.	To W. D. McAbee, salary..... 150 00
"	31.	To J. C. Diggs, salary..... 116 67
"	31.	To Floyd Huff, salary..... 30 00
"	31.	To Miss Gail M. Stapp, salary..... 75 00

1914.	
Mar. 31.	To A. W. Bruner, salary..... \$125 00
" 31.	To B. W. Cohn, salary..... 125 00
" 31.	To F. W. Tucker, salary..... 125 00
" 31.	To C. L. Hutchens, salary..... 100 00
" 31.	To Richard White, salary..... 100 00
" 31.	To J. L. Anderson, salary..... 8 34
Apr. 6.	To H. E. Barnard, expense..... 16 32
" 6.	To H. W. Bishop, expense..... 3 40
" 6.	To W. D. McAbee, expense..... 12 65
" 6.	To A. W. Bruner, expense..... 52 85
" 6.	To B. W. Cohn, expense..... 77 12
" 6.	To F. W. Tucker, expense..... 65 14
" 6.	To C. L. Hutchens, expense..... 39 40
" 6.	To Richard White, expense..... 58 65
" 6.	To American Toilet Supply Co., laundry.... 3 75
" 6.	To W. B. Burford, merchandise..... 110 82
" 6.	To Chas. O. Carr Co., merchandise..... 4 00
" 6.	To American Express Co., service..... 3 75
" 6.	To Gaylord Bros., merchandise..... 10 20
" 6.	To Harmon & Hall..... 1 86
" 6.	To Railroad Transfer Co., freight and dray- age ..... 6 27
" 6.	To W. K. Stewart Co., books..... 8 20
" 6.	To Central Union Telephone Co..... 3 15
<hr/>	
Expense second quarter.....	
Apr. 30.	To H. E. Barnard, salary..... \$208 33
" 30.	To H. E. Bishop, salary..... 150 00
" 30.	To W. D. McAbee, salary..... 150 00
" 30.	To J. G. Diggs, salary..... 116 66
" 30.	To Floyd Huff, salary..... 30 00
" 30.	To Miss Gail M. Stapp, salary..... 75 00
" 30.	To A. W. Bruner, salary..... 125 00
" 30.	To B. W. Cohn, salary..... 125 00
" 30.	To F. W. Tucker, salary..... 125 00
" 30.	To C. L. Hutchens, salary..... 100 00
" 30.	To Richard White, salary..... 100 00
" 30.	To J. L. Anderson, salary..... 8 33
May 7.	To A. W. Bruner, expense..... 66 45
" 7.	To B. W. Cohn, expense..... 11 40
" 7.	To F. W. Tucker, expense..... 57 40
" 7.	To C. L. Hutchens, expense..... 61 25
" 7.	To Richard White, expense..... 46 95
" 7.	To H. E. Barnard, expense..... 36 99
" 7.	To W. H. Bass Photo. Co., merchandise.... 60
" 7.	To W. B. Burford, merchandise..... 61 13
" 7.	To American Express Co., service..... 76
" 7.	To Indiana Typewriter & Supply Co., mer- chandise ..... 6 75



1914.

May	7.	To The H. Lieber Co., merchandise.....	\$2 16
"	7.	To Indianapolis Telephone Co., tolls.....	3 85
"	7.	To Vonnegut Hardware Co., merchandise..	1 70
"	22.	To R. E. Springsteen P. M., stamps.....	100 00
"	31.	To H. E. Barnard, salary.....	208 33
"	31.	To H. E. Bishop, salary.....	150 00
"	31.	To W. D. McAbee, salary.....	150 00
"	31.	To J. C. Diggs, salary.....	116 67
"	31.	To Floyd Huff, salary.....	30 00
"	31.	To Miss Gail M. Stapp, salary.....	75 00
"	31.	To A. W. Bruner, salary.....	125 00
"	31.	To B. W. Cohn, salary.....	125 00
"	31.	To F. W. Tucker, salary.....	125 00
"	31.	To C. L. Hutchens, salary.....	100 00
"	31.	To Richard White, salary.....	100 00
"	31.	To J. L. Anderson, salary.....	8 33
June	6.	To A. B. Bruner, expense.....	52 85
"	6.	To F. W. Tucker, expense.....	59 95
"	6.	To B. W. Cohn, expense.....	58 01
"	6.	To C. L. Hutchens, expense.....	55 25
"	6.	To Richard White, expense.....	40 80
"	6.	To The Indianapolis News, papers.....	2 00
"	6.	To W. B. Burford, merchandise.....	50 52
"	6.	To Adams Express Co., service.....	50
"	6.	To American Express Co., service.....	5 23
"	6.	To Pittman-Moore Co., merchandise.....	134 97
"	30.	To H. E. Barnard, salary.....	208 34
"	30.	To H. E. Bishop, salary.....	150 00
"	30.	To W. D. McAbee, salary.....	150 00
"	30.	To J. C. Diggs, salary.....	116 67
"	30.	To Floyd Huff, salary.....	30 00
"	30.	To Miss Gail M. Stapp, salary.....	75 00
"	30.	To A. W. Bruner, salary.....	125 00
"	30.	To B. W. Cohn, salary.....	125 00
"	30.	To F. W. Tucker, salary.....	125 00
"	30.	To C. L. Hutchens, salary.....	100 00
"	30.	To Richard White, salary.....	100 00
"	30.	To J. L. Anderson, salary.....	8 34
July	7.	To American Toilet Supply Co., laundry....	3 75
"	7.	To Adams Express Co., service.....	53
"	7.	To American Express Co., service.....	2 02
"	7.	To C. P. Lesh Paper Co., merchandise.....	35 71
"	7.	To H. E. Barnard, expense.....	117 16
"	7.	To The Standard Calorimeter Co., merchan- dise .....	1 50
"	7.	To Indianapolis Telephone Co., tolls.....	3 45
"	7.	To The H. Lieber Co., merchandise.....	15 31

Expense third quarter.....

\$5,036 90

1914.

July 31.	To H. E. Barnard, salary.....	\$208 33
" 31.	To H. E. Bishop, salary.....	150 00
" 31.	To W. D. McAbee, salary.....	150 00
" 31.	To J. C. Diggs, salary.....	125 00
" 31.	To Floyd Huff, salary.....	30 00
" 31.	To Miss Gail M. Stapp, salary.....	75 00
" 31.	To A. W. Bruner, salary.....	125 00
" 31.	To B. W. Cohn, salary.....	125 00
" 31.	To F. W. Tucker, salary.....	125 00
" 31.	To C. L. Hutchens, salary.....	125 00
" 31.	To Richard White, salary.....	125 00
" 31.	To J. L. Anderson, salary.....	8 33
Aug. 7.	To W. D. McAbee, expense.....	112 15
" 7.	To Adams Express Co., service.....	6 13
" 7.	To American Express Co., service.....	2 68
" 7.	To Wells-Fargo Express Co., service.....	1 67
" 7.	To Indiana Typewriter & Supply Co., repairs	3 00
" 7.	To Pittman-Moore Co., merchandise.....	52 83
" 7.	To Remington Typewriter Co., repairs.....	50
" 7.	To Schnull & Co., merchandise.....	94
" 7.	To W. K. Stewart Co.....	1 60
" 7.	To G. C. Thomas, expense.....	6 40
" 31.	To H. E. Barnard, salary.....	208 33
" 31.	To H. E. Bishop, salary.....	150 00
" 31.	To W. D. McAbee, salary.....	150 00
" 31.	To J. C. Diggs, salary.....	125 00
" 31.	To Floyd Huff, salary.....	30 00
" 31.	To Miss Gail M. Stapp, salary.....	75 00
" 31.	To A. W. Bruner, salary.....	125 00
" 31.	To B. W. Cohn, salary.....	125 00
" 31.	To F. W. Tucker, salary.....	125 00
" 31.	To C. L. Hutchens, salary.....	125 00
" 31.	To Richard White, salary.....	125 00
" 31.	To J. L. Anderson, salary.....	8 33
Sept. 7.	To H. E. Barnard, expense.....	20 30
" 7.	To Adams Express Co., service.....	2 35
" 7.	To American Express Co., service.....	4 75
" 7.	To Wells-Fargo Express Co., service.....	60
" 7.	To Indianapolis Electric Supply Co., fan...	14 75
" 7.	To The H. Lieber Co., merchandise.....	37
" 7.	To Central Union Telephone Co., tolls.....	1 15
" 29.	To W. B. Burford, merchandise.....	92 80
" 29.	To Adams Express Co., service.....	83
" 29.	To American Express Co., service.....	1 82
" 29.	To Wells-Fargo Express Co., service.....	45
" 29.	To Central Supply Co., merchandise.....	8 94
" 29.	To Central Union Telephone Co., tolls.....	4 25
" 29.	To Indiana Typewriter & Supply Co., mer- chandise .....	85
" 29.	To W. K. Stewart Co., merchandise.....	1 00

1914.

Sept. 29.	To C. L. Alsbury, Secty. & Treas., journal...	\$5 00
" 30.	To H. E. Barnard, salary.....	208 34
" 30.	To H. E. Bishop, salary.....	150 00
" 30.	To W. D. McAbee, salary.....	150 00
" 30.	To J. C. Diggs, salary.....	125 00
" 30.	To Floyd Huff, salary.....	30 00
" 30.	To Miss Gail M. Stapp, salary.....	75 00
" 30.	To A. W. Bruner, salary.....	125 00
" 30.	To B. W. Cohn, salary.....	125 00
" 30.	To F. W. Tucker, salary.....	125 00
" 30.	To C. L. Hutchens, salary.....	125 00
" 30.	To Richard White, salary.....	125 00
" 30.	To J. L. Anderson, salary.....	8 34
" 30.	To G. C. Thomas, salary.....	75 00
" 30.	To Miss Mary Vestal, salary.....	50 00
" 30.	To A. R. Tucker, salary.....	30 00
" 30.	To Philip Brodus, salary.....	50 00
Total expense fourth quarter.....		<hr/> \$4,668 01
Appropriation .....		\$20,000 00
Expense first quarter.....		\$5,223 74
Expense second quarter.....		5,028 62
Expense third quarter.....		5,036 90
Expense fourth quarter.....		<hr/> 4,668 01
Total expense .....		<hr/> \$19,957 27
Balance reverting to general fund...		<hr/> \$42 73

## INDIANA STATE BOARD OF HEALTH—WATER LABORATORY.

*For Fiscal Year October 1, 1913, to September 30, 1914.*

1913.

Oct. 31.	To J. A. Craven, salary.....	\$150 00
" 31.	To Miss Nolene Marnee, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	60 00
" 31.	To G. C. Thomas, salary.....	75 00
" 31.	To A. R. Tucker, salary.....	30 00
" 31.	To Philip Brodus, salary.....	50 00
Nov. 7.	To J. A. Craven, expense.....	92 94
" 7.	To F. H. Prunk, merchandise.....	21 75
" 30.	To J. A. Craven, salary.....	150 00
" 30.	To Miss Nolene Marnee, salary.....	50 00
" 30.	To G. C. Thomas, salary.....	75 00
" 30.	To A. R. Tucker, salary.....	30 00
" 30.	To Philip Brodus, salary.....	50 00
Dec. 6.	To Allen Newman, storage.....	5 00
" 6.	To Engineering Record, subscription.....	8 00
" 6.	To American Express Co., service.....	1 45
" 6.	To United States Express Co., service.....	1 05

## 1913.

Dec. 6.	To the H. Lieber Co., merchandise.....	\$2 40
" 6.	To Frank H. Prunk, merchandise.....	2 25
" 6.	To Railroad Trans. Co., freight and drayage	1 23
" 31.	To J. A. Craven, salary.....	150 00
" 31.	To Miss Nolene Marnee, salary.....	50 00
" 31.	To G. C. Thomas, salary.....	75 00
" 31.	To A. R. Tucker, salary.....	30 00
" 31.	To Philip Brodus, salary.....	50 00

## 1914.

Jan. 14.	To American Toilet Supply Co., laundry....	6 30
" 14.	To J. A. Craven, expense.....	22 90
" 14.	To National Express Co., service.....	30
" 14.	To Allen Newman, storage on boat.....	5 00

Expense first quarter..... \$1,290 57

Jan. 31.	To J. A. Craven, salary.....	\$150 00
" 31.	To Miss Mary Vestal, salary.....	50 00
" 31.	To G. C. Thomas, salary.....	75 00
" 31.	To A. R. Tucker, salary.....	30 00
" 31.	To Philip Brodus, salary.....	50 00
Feb. 9.	To H. E. Barnard, expense.....	24 14
" 9.	To B. H. Herman & Co., merchandise.....	1 70
" 9.	To Indianapolis Belting & Supply Co., merchandise .....	18 75
" 9.	To Allen Newman, storage of boat Dec. and June .....	10 00
" 28.	To J. A. Craven, salary.....	150 00
" 28.	To Miss Mary Vestal, salary.....	50 00
" 28.	To G. C. Thomas, salary.....	75 00
" 28.	To A. R. Tucker, salary.....	30 00
" 28.	To Philip Brodus, salary.....	50 00
Mar. 6.	To J. A. Craven, expense.....	4 30
" 6.	To The H. Lieber Co., merchandise.....	12 63
" 6.	To Vonnegut Hardware Co., merchandise....	1 30
" 31.	To J. A. Craven, salary.....	150 00
" 31.	To Miss Mary Vestal, salary.....	50 00
" 31.	To G. C. Thomas, salary.....	75 00
" 31.	To A. R. Tucker, salary.....	30 00
" 31.	To Philip Brodus, salary.....	50 00
Apr. 6.	To H. E. Barnard, expense.....	34 00
" 6.	To J. A. Craven, expense.....	13 12
" 6.	To American Toilet Supply, Co., laundry....	9 30
" 6.	To W. H. Bass Photo. Co., merchandise.....	5 40
" 6.	To United States Express Co., service.....	1 00
" 6.	To Chas. L. Hartman, merchandise.....	17 50
" 6.	To The H. Lieber Co., merchandise.....	15 47
" 6.	To Allen Newman, storage of boat.....	5 00

Expense second quarter..... \$1,238 61

1914.

Apr. 30.	To J. A. Craven, salary.....	\$150 00
" 30.	To Miss Mary Vestal, salary.....	50 00
" 30.	To G. C. Thomas, salary.....	75 00
" 30.	To A. R. Tucker, salary.....	30 00
" 30.	To Philip Brodus, salary.....	50 00
May 7.	To J. A. Craven, expense.....	38 70
" 7.	To Adams Express Co., service.....	5 23
" 7.	To C. A. Jennings, merchandise.....	20 00
" 7.	To The H. Lieber Co., merchandise.....	6 81
" 7.	To Allen Newman, storage on boat.....	5 00
" 31.	To J. A. Craven, salary.....	150 00
" 31.	To Miss Mary Vestal, salary.....	50 00
" 31.	To G. C. Thomas, salary.....	75 00
" 31.	To A. R. Tucker, salary.....	30 00
" 31.	To Philip Brodus, salary.....	50 00
June 6.	To American Express Co., service.....	50
" 6.	To Adams Express Co., service.....	60
" 6.	To Allen Newman, service.....	5 00
" 6.	To J. C. Diggs, expense.....	57 55
" 30.	To J. A. Craven, salary.....	150 00
" 30.	To Miss Mary Vestal, salary.....	50 00
" 30.	To G. C. Thomas, salary.....	75 00
" 30.	To A. R. Tucker, salary.....	30 00
" 30.	To Philip Brodus, salary.....	50 00
July 7.	To American Toilet Supply Co., laundry....	5 85
" 7.	To Balke & Krauss Co., merchandise.....	1 18
" 7.	To Brocksmitth & Bovy, groceries.....	28 00
" 7.	To Buck & Boyd Co., engine, etc.....	87 30
" 7.	To Dyer Packing Co., merchandise.....	2 30
" 7.	To American Express Co., service.....	1 08
" 7.	To Allen Newman, storage of boat.....	9 67
" 7.	To Railroad Transfer Co., freight and dray- age .....	2 00
" 7.	To W. H. Weed, merchandise.....	4 78
" 7.	To W. D. McAbee, expense.....	120 98
Expense for third quarter.....		<hr/> \$1,485 53

July 31.	To Mary Vestal, salary.....	\$50 00
" 31.	To G. C. Thomas, salary.....	75 00
" 31.	To A. R. Tucker, salary.....	30 00
" 31.	To H. U. Brown, salary.....	30 00
" 31.	To Philip Brodus, salary.....	50 00
Aug. 7.	To J. C. Diggs, expense.....	68 42
" 7.	To Brocksmitth & Bouvy, groceries.....	64 25
" 7.	To Postelwaite & Case, painting boat.....	22 50
" 7.	To E. H. Sargent & Co., merchandise.....	22 22
" 7.	To The Western Sun, hand bills.....	12 00
" 31.	To Miss Mary Vestal, salary.....	50 00
" 31.	To G. C. Thomas, salary.....	75 00

1914.		
Aug. 31.	To A. R. Tucker, salary.....	\$30 00
" 31.	To H. U. Brown, Jr., salary.....	30 00
" 31.	To Philip Brodus, salary.....	50 00
Sept. 7.	To J. O. Diggs, expense.....	77 05
" 7.	To A. R. Tucker, ice book.....	7 00
" 7.	To Brocksmith & Bouvy, groceries.....	66 60
" 28.	To American Toilet and Supply Co., laundry	8 25
" 28.	To H. E. Barnard, expense.....	63 14
" 28.	To Brocksmith & Bouvy, groceries.....	61 14
" 28.	To Joseph Gardner, merchandise.....	1 85
" 28.	To B. H. Harman, merchandise.....	1 00
" 28.	To The H. Lieber Co., merchandise.....	5 80
" 28.	To Pittman-Moore Co., merchandise.....	9 03
" 28.	To W. H. Weed, merchandise.....	10 60
" 30.	To Hilton U. Brown, Jr., salary.....	7 50
" 30.	To Arthur Lockhart, salary.....	18 75
		<hr/>
Expense fourth quarter.....		\$998 00
Appropriation .....		\$5,000 00
Expense first quarter.....		\$1,290 57
Expense second quarter.....		1,238 61
Expense third quarter.....		1,465 53
Expense fourth quarter.....		998 00
		<hr/>
Total expense .....		\$4,992 71
		<hr/>
Balance reverting to general fund....		\$7 29

# HYDROPHOBIA FUND.—INDIANA STATE BOARD OF HEALTH.

*For Fiscal Year October 1, 1913, to September 30, 1914.*

1913.		
Oct. 21.	To J. L. Anderson, railroad fares.....	\$24 15
" 21.	To Hotel Metropole, rooms.....	72 00
" 21.	To Mrs. S. Bennett, board.....	52 50
" 21.	To Mrs. J. A. Millikan, board.....	84 70
" 31.	To J. L. Anderson, railroad fares.....	5 90
" 31.	To Mrs. S. Bennett, board.....	21 50
" 31.	To Hotel Metropole, rooms.....	21 00
" 31.	To Frank Willey, room and board.....	21 00
" 31.	To Dr. K. W. Hidy, expense.....	1 00
" 31.	To Error Vouchers No. 43121 and 43613....	50
" 31.	To Dr. K. W. Hidy, salary.....	125 00
" 31.	To Miss Etta Dolan, salary.....	50 00
" 31.	To J. L. Anderson, salary.....	12 50
Nov. 1.	To Mrs. May Marshall, office rent.....	31 75
" 7.	To J. L. Anderson, railroad fare.....	9 10
" 7.	To Mrs. Sanford Bennett, board.....	10 50
" 7.	To Hotel Metropole, rooms.....	22 50

## 1913.

Nov. 7.	To Aquos Distilled Water Co., merchandise	\$1 00
" 7.	To Western Union Telegraph Co., tolls.....	1 59
" 24.	To J. L. Anderson, railroad fares.....	11 15
" 24.	To Mrs. Joe Poulton, room and board.....	21 00
" 24.	To J. A. Millikan, board.....	78 50
" 24.	To Hotel Metropole, rooms.....	49 50
" 30.	To Dr. K. W. Hidy, salary.....	125 00
" 30.	To Miss Etta Dolan, salary.....	50 00
" 30.	To J. L. Anderson, salary.....	12 50
Dec. 6.	To Francis Pharmacy Co., merchandise.....	4 44
" 6.	To Mrs. May Marshall, office rent.....	26 00
" 6.	To Pettis Dry Goods Co., merchandise.....	4 50
" 6.	To L. C. Smith & Bros. T. W. Co., merchandise .....	75
" 6.	To G. E. Stechert & Co., journal.....	3 35
" 6.	To Western Union Telegraph Co., tolls.....	1 59
" 6.	To J. L. Anderson, railroad fares.....	28 55
" 6.	To Hotel Metropole, rooms.....	67 00
" 6.	To Mrs. J. A. Millikan, board.....	118 20
" 22.	To J. L. Anderson, railroad fares.....	33 40
" 22.	To Hotel Metropole, rooms.....	65 00
" 22.	To Mrs. J. A. Millikan, board.....	115 00
" 31.	To Dr. K. W. Hidy, salary.....	125 00
" 31.	To Miss Etta Dolan, salary.....	50 00
" 31.	To J. L. Anderson, salary.....	12 50

## 1914.

Jan. 14.	To J. L. Anderson, railroad fares.....	27 45
" 14.	To Hotel Metropole, rooms.....	119 00
" 14.	To Mrs. Jas. A. Millikan, board.....	143 25
" 14.	To Mrs. May Marshall, office rent.....	26 00
" 14.	To American Tollet Supply Co., laundry....	3 65
" 14.	To Aquos Distilled Water Co., merchandise.	2 50
" 14.	To The Francis Pharmacy Co., merchandise	14 29
" 14.	To Klee & Coleman, merchandise.....	2 50
" 14.	To L. C. Smith & Bros. Typewriter Co., merchandise .....	75
" 14.	To G. E. Stechert & Co., journal.....	1 85
" 14.	To Western Union Telegraph Co., tolls.....	2 55

Expense first quarter.....

\$1,914 91

Jan. 31.	To Miss Etta Dolan, salary.....	\$50 00
" 31.	To J. L. Anderson, salary.....	12 50
Feb. 9.	To J. L. Anderson, railroad fares.....	18 95
" 9.	To Hotel Metropole, rooms.....	46 50
" 9.	To Mrs. Jas. A. Millikan, board.....	51 10
" 9.	To Mrs. May Marshall, office rent.....	32 25
" 9.	To Aquos Distilled Water Co., merchandise.	2 00
" 9.	To J. B. Lippincott Co., book.....	2 50
" 9.	To Spencer Lens Co., merchandise.....	9 11

1914.		
Feb.	9.	To G. E. Stechert & Co..... \$20 25
"	9.	To Miss Hervy Hooker, expense..... 3 70
"	9.	To Dr. A. E. Schweltzer, expense..... 8 00
"	9.	To J. L. Anderson, expense..... 7 75
"	9.	To Western Union Telegraph Co., tolls..... 1 80
"	9.	To Klee & Coleman, merchandise..... 2 50
"	9.	To Dr. L. W. Barry, salary..... 125 00
"	9.	To Miss Etta Dolan, salary..... 50 00
"	9.	To J. L. Anderson, salary..... 12 50
Mar.	6.	To Hotel Metropole, rooms..... 70 00
"	6.	To Mrs. J. A. Millikan, board..... 89 75
"	6.	To Mrs. Marshall, office rent..... 26 00
"	6.	To J. L. Anderson, railroad fares..... 24 50
"	6.	To The Francis Pharmacy Co..... 10 44
"	6.	To W. B. Burford, merchandise..... 11 85
"	6.	To Western Union Telegraph Co., tolls..... 79
"	31.	To Dr. L. W. Barry, salary..... 125 00
"	31.	To Miss Etta Dolan, salary..... 50 00
"	31.	To J. L. Anderson, salary..... 12 50
Apr.	6.	To J. L. Anderson, railroad fares..... 38 12
"	6.	To American Toilet Supply Co., laundry.... 55
"	6.	To Aquos Distilled Water Co., merchandise.. 2 00
"	6.	To The Francis Pharmacy Co., merchandise 7 39
"	6.	To Knickerbacker Home, board and room.. 7 75
"	6.	To Hotel Metropole. rooms..... 48 00
"	6.	To Mrs. Jas. A. Millikan, board..... 65 50
"	6.	To Mrs. May Marshall, office rent..... 26 00
		Expense second quarter..... \$1,072 55
Apr.	17.	To Dr. L. W. Barry, salary..... \$62 50
"	27.	To J. L. Anderson, railroad fares..... 16 50
"	27.	To Mrs. Wm. Flke, room and board..... 24 00
"	27.	To Mrs. J. A. Millikan, board..... 15 50
"	27.	To Hotel Metropole, rooms..... 15 50
"	30.	To Dr. M. V. Boyle, salary..... 62 50
"	30.	To Miss Etta Dolan, salary..... 50 00
"	30.	To J. L. Anderson, salary..... 12 50
May	7.	To J. L. Anderson, railroad fares..... 4 35
"	7.	To Hotel Metropole, rooms..... 18 50
"	7.	To Mrs. Jas. A. Millikan, board..... 26 00
"	7.	To Mrs. May Marshall, office rent..... 32 25
"	7.	To Aquos Distilled Water Co., merchandise. 1 00
"	7.	To The Francis Pharmacy Co., merchandise 16 89
"	7.	To Joseph Gardner, merchandise..... 18 80
"	7.	To G. E. Stechert & Co., merchandise..... 2 10
"	7.	To Spencer Lens Co., merchandise..... 1 61
"	19.	To J. L. Anderson, railroad fares..... 34 50
"	19.	To Mrs. Edward Kribbs, room and board.... 19 50
"	19.	To Mrs. C. J. Leach, room and board..... 18 00



1914.		
May 19.	To Mrs. Jas. A. Millikan, board.....	\$56 50
" 19.	To Hotel Metropole, rooms.....	34 75
" 31.	To Dr. W. V. Boyle, salary.....	125 00
" 31.	To Miss Etta Dolan, salary.....	50 00
" 31.	To J. L. Anderson, salary.....	12 50
June 6.	To J. L. Anderson, railroad fares.....	8 70
" 6.	To Hotel Metropole, room.....	10 40
" 6.	To Mrs. Jas. A. Millikan, board.....	18 00
" 6.	To Mrs. Susan Stevenson, room and board.	19 00
" 6.	To Mrs. Blanche Walker, railroad fare, room and board .....	22 70
" 6.	To Mrs. May Marshal, office rent.....	25 75
" 6.	Francis Pharmacy Co., merchandise.....	7 30
" 6	To Klee & Coleman, merchandise.....	2 50
" 24.	To J. L. Anderson, railroad fares.....	55 70
" 24.	To Mrs. H. B. Kendrick, room and board....	28 00
" 24.	To Mrs. Jas. A. Millikan, board.....	43 05
" 24.	To Hotel Metropole, rooms.....	32 40
" 30.	To Dr. W. V. Boyle, salary.....	125 00
" 30.	To Miss Etta Dolan, salary.....	50 00
" 30.	To J. L. Anderson, salary.....	12 50
July 7.	To American Toilet Supply Co., laundry....	1 40
" 7.	To Aquos Distilled Water Co., merchandise..	2 00
" 7.	To The Francis Pharmacy Co.....	13 50
" 7.	To J. L. Anderson, railroad fares.....	20 50
" 7.	To Mrs. May Marshall, office rent.....	25 75
" 7.	To Mrs. Jas. A. Millikan, board.....	38 00
" 7.	To Hotel Metropole, rooms.....	25 90

Expense third quarter..... \$1,319 50

July 13.	To J. L. Anderson, railroad fares.....	43 60
" 13.	To Mrs. Jas. A. Millikan, board.....	81 00
" 13.	To Hotel Metropole, rooms.....	54 10
" 13.	To Hotel English, room and board.....	34 00
" 13.	To Mrs. A. E. Ottinger, room and board....	8 00
" 13.	To Mrs. Robt. Senour, room and board.....	8 00
" 22.	To J. L. Anderson, railroad fares.....	18 80
" 22.	To Hotel Metropole, rooms.....	16 80
" 22.	To Mrs. Jas. A. Millikan, board.....	23 00
" 22.	To Mrs. Geo. Carrico, room and board....	36 00
" 22.	To Clint. Wood, room and board.....	18 00
" 31.	To Dr. W. V. Boyle, salary.....	125 00
" 31.	To Etta Dolan, salary.....	50 00
" 31.	To J. L. Anderson, salary.....	12 50
Aug. 7.	To J. L. Anderson, railroad fares.....	66 40
" 7.	To Mrs. L. H. Bickford, room and board....	10 00
" 7.	To Mrs. May Marshall, office rent.....	16 00
" 7.	To Hotel Metropole, rooms.....	14 00
" 7.	To Mrs. Jas. A. Millikan, board.....	23 00

1914.

Aug.	7.	To Aquos Distilled Water Co., merchandise	\$1 00
"	7.	To Citizens Gas Co., labor and freight.....	3 29
"	7.	To Indiana Reduction Co., service.....	13 50
"	7.	To Klee & Coleman, merchandise.....	5 00
"	7.	To National Incinerator Co., freight.....	13 41
"	7.	To Puryear & Porter, drayage.....	5 00
"	7.	To Ward Bros. Drug Co., merchandise.....	7 50
"	7.	To Western Union Telegraph Co., tolls.....	2 63
"	18.	To J. L. Anderson, railroad fares.....	24 60
"	18.	To Mrs. Charlie Barton, room and board....	70 00
"	18.	To Mrs. J. W. Little, room and board.....	7 00
"	18.	To Mrs. Jas. A. Millikan, room and board..	14 00
"	18.	To Hotel Metropole, rooms.....	12 00
"	25.	To J. L. Anderson, railroad fares.....	52 85
"	25.	To Miss Lizzie Kittler, room and board....	14 00
"	31.	To Dr. W. V. Boyle, salary.....	125 00
"	31.	To Miss Etta Dolan, salary.....	50 00
"	31.	To J. L. Anderson, salary.....	12 50
Sept.	3.	To J. L. Anderson, railroad fares.....	73 55
"	3.	To Hotel Hetropole, rooms.....	49 40
"	3.	To Mrs. Jas. A. Millikan, board.....	75 50
"	3.	To Aquos Distilled Water Co., merchandise.	3 50
"	3.	To Central Union Telephone Co., rental....	10 02
"	3.	To The Francis Pharmacy Co., merchandise	6 65
"	3.	To Mrs. Emma Griener, labor.....	3 00
"	3.	To Harmon & Hall, merchandise.....	1 86
"	3.	To Indiana Reduction Co., service.....	12 00
"	3.	To Klee & Coleman, merchandise.....	2 50
"	3.	To John S. Spann & Co., office rent two months .....	50 00
"	3.	To Taylor Carpet Co., merchandise.....	118 03
"	3.	To Ward Bro's Drug Co., merchandise.....	4 30
"	3.	To J. L. Anderson, railroad fares.....	2 50
"	28.	To J. L. Anderson, railroad fare.....	78 20
"	28.	To Hotel Metropole, rooms.....	52 50
"	28.	To Mrs. Jas. A. Millikan, board.....	81 85
"	28.	To Lambert Hammond, room and board....	14 00
"	28.	To Mrs. E. F. Rohrman, room and board...	17 00
"	28.	To Fertig & Keevers, signs.....	20 00
"	28.	To John S. Spann & Co., rent.....	25 00
"	28.	To Dugan-Johnson Co., merchandise.....	1 50
"	28.	To Francis Pharmacy Co., merchandise.....	5 30
"	28.	To International Instrument Co., merchandise .....	10 00
"	28.	To Pettis Dry Goods Co., merchandise.....	19 50
"	28.	To American Toilet Supply Co., laundry....	4 15
"	28.	To Mrs. Emma Griener, labor.....	3 00
"	28.	To Indiana Reduction Co., service.....	13 50
"	28.	To Aquos Distilled Water Co., merchandise	2 00
"	28.	To W. B. Burford, merchandise.....	10 66

1914.		
Sept. 28.	To Citizens Gas Co., merchandise.....	\$0 67
" 28.	To J. L. Anderson, railroad fares.....	4 85
" 30.	To Dr. W. V. Boyle, salary.....	125 00
" 30.	To Miss Etta Dolan, salary.....	50 00
" 30.	To J. L. Anderson, salary.....	12 50
Expense fourth quarter.....		\$2.055 47
Expense first quarter.....		\$1,914 91
Expense second quarter.....		1,072 55
Expense third quarter.....		1,319 50
Expense fourth quarter.....		2,055 47
Total .....		\$6,362 43
Total collected and carried forward		6,288 51
Overdrawn .....		\$93 92

# INDIANA STATE BOARD OF HEALTH.—WEIGHTS AND MEASURES FUND.

*For Fiscal Year October 1, 1913, to September 30, 1914.*

1913.		
Oct. 31.	To H. E. Barnard, salary.....	\$83 33
" 31.	To John T. Willett, salary.....	125 00
" 31.	To Edith Hoffman, salary.....	75 00
" 31.	To J. L. Anderson, salary.....	20 83
Nov. 7.	To John T. Willett, expense.....	90 45
" 30.	To H. E. Barnard, salary.....	83 33
" 30.	To John T. Willett, salary.....	125 00
" 30.	To Edith Hoffman, salary.....	75 00
" 30.	To J. L. Anderson, salary.....	20 83
Dec. 6.	To John T. Willett, expense.....	77 49
" 6.	To W. & L. E. Gurley, merchandise.....	2 54
" 6.	To D. H. Smith, freight and drayage.....	7 84
" 31.	To H. E. Barnard, salary.....	83 34
" 31.	To John T. Willett, salary.....	125 00
" 31.	To Edith Hoffman, salary.....	75 00
" 31.	To J. L. Anderson, salary.....	20 84
1914.		
Jan. 14.	To John T. Willett, expense.....	59 35
" 14.	To W. & L. E. Gurley, merchandise.....	4 33
Expense first quarter.....		\$1,154 50
Jan. 31.	To H. E. Barnard, salary.....	\$83 33
" 31.	To John T. Willett, salary.....	125 00
" 31.	To Edith Hoffman, salary.....	75 00
" 31.	To J. L. Anderson, salary.....	20 83

1914.

Feb. 9.	To H. E. Barnard, expense.....	\$84 30
" 9.	To John T. Willett, expense.....	65 55
" 9.	To D. H. Smith, freight and drayage.....	4 28
" 28.	To H. E. Barnard, salary.....	83 32
" 28.	To John E. Willett, salary.....	125 00
" 28.	To Edith Hoffman, salary.....	75 00
" 28.	To J. L. Anderson, salary.....	20 83
Mar. 6.	To John T. Willett, expense.....	76 79
" 6.	To Fertig & Keever, merchandise.....	2 00
" 31.	To H. E. Barnard, salary.....	83 34
" 31.	To John T. Willett, salary.....	125 00
" 31.	To Edith Hoffman, salary.....	75 00
" 31.	To J. L. Anderson, salary.....	20 84
Apr. 6.	To John T. Willett, expense.....	94 80
" 6.	To W. H. Block Co., merchandise.....	1 60
" 6.	To W. B. Burford, merchandise.....	7 67

Expense second quarter.....

\$1,249 47

Apr. 30.	To H. E. Barnard, salary.....	\$83 33
" 30.	To John T. Willett, salary.....	125 00
" 30.	To Edith Hoffman, salary.....	75 00
" 30.	To J. L. Anderson, salary.....	20 83
May 7.	To John T. Willett, expense.....	78 57
" 31.	To H. E. Barnard, salary.....	83 33
" 31.	To John T. Willett, salary.....	125 00
" 31.	To Edith Hoffman, salary.....	75 00
" 31.	To J. L. Anderson, salary.....	20 83
June 6.	To John T. Willett, expense.....	126 20
" 6.	To H. E. Barnard, expense.....	76 00
" 30.	To H. E. Barnard, salary.....	83 34
" 30.	To John T. Willett, salary.....	125 00
" 30.	To Edith Hoffman, salary.....	75 00
" 30.	To J. L. Anderson, salary.....	20 84
July 7.	To John T. Willett, expense.....	67 47
" 7.	To F. W. Tucker, expense.....	48 95
" 7.	To B. W. Cohn, expense.....	42 34

Expense third quarter.....

\$1,352 03

July 31.	To H. E. Barnard, salary.....	\$83 33
" 31.	To John T. Willett, salary.....	125 00
" 31.	To Edith Hoffman, salary.....	75 00
" 31.	To J. L. Anderson, salary.....	20 83
Aug. 7.	To John T. Willett, expense.....	66 07
" 7.	To A. W. Bruner, expense.....	51 10
" 7.	To B. W. Cohn, expense.....	54 55
" 7.	To F. W. Tucker, expense.....	64 85
" 31.	To H. E. Barnard, salary.....	83 33
" 31.	To John T. Willett, salary.....	125 00

**1914.**

Aug. 31.	To Edith Hoffman, salary.....	\$75 00
" 31.	To J. L. Anderson, salary.....	20 83
Sept. 7.	To John T. Willett, expense.....	74 10
" 7.	To B. W. Cohn, expense.....	77 98
" 29.	To John T. Willett, expense.....	87 45
" 29.	To A. W. Bruner, expense.....	59 40
" 29.	To B. W. Cohn, expense.....	61 46
" 29.	To F. W. Tucker, expense.....	63 76
" 29.	To C. L. Hutchens, expense.....	49 10
" 29.	To Richard White, expense.....	86 15
" 29.	To American Tent & Awning Co., labor and merchandise .....	40 00
" 29.	To W. B. Burford, merchandise.....	51 59
" 29.	To Fairbanks, Morse & Co., merchandise....	272 50
" 30.	To H. E. Barnard, salary.....	83 34
" 30.	To John T. Willett, salary.....	125 00
" 30.	To Edith Hoffman, salary.....	75 00
" 30.	To J. L. Anderson, salary.....	20 84
Expense fourth quarter.....		\$2,072 51
Appropriation, regular .....		\$5,000 00
Appropriation, specific .....		5,000 00
Total .....		\$10,000 00
Expense first quarter.....		\$1,154 50
Expense second quarter.....		1,249 47
Expense third quarter.....		1,352 08
Expense fourth quarter.....		2,072 51
Total .....		5,828 51
Total reverting to general fund.....		\$4,171 49

## INDIANA STATE BOARD OF HEALTH.—COLD STORAGE FUND.

*For Fiscal Year October 1, 1913, to September 30, 1914.*

## Receipts.

**1913.**

Nov. 15.	To cash for inspection and license.....	\$40 00
1914.		
June 5.	To cash for inspection and license.....	310 00
" 20.	To cash for inspection and license.....	60 00
July 15.	To cash for inspection and license.....	20 00
Aug. 12.	To cash for inspection and license.....	30 00
Sept. 12.	To cash for inspection and license.....	10 00
" 24.	To cash for inspection and license.....	20 00
	Total receipts .....	<u>\$490 00</u>

## Expended.

1914.

<b>July</b>	7.	By A. W. Bruner, inspections.....	\$54 55
"	7.	By C. L. Hutchens, inspections.....	61 25
"	7.	By Richard White, inspections.....	56 55
<b>Aug.</b>	7.	By C. L. Hutchins, inspections.....	30 15
"	7.	By Richard White, inspections.....	49 85
<b>Sept.</b>	7.	By A. W. Bruner, inspections.....	50 40
"	7.	By F. W. Tucker, inspections.....	51 36
"	7.	By C. L. Hutchens, inspections.....	62 10
"	7.	By Richard White, inspections.....	40 30
<b>Total expense .....</b>			<b>\$456 51</b>
<b>Balance reverting to general fund.....</b>			<b>\$33 49</b>



**TRANSCRIPTS**

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**PROCEEDINGS**

**OF THE**

**STATE BOARD OF HEALTH**

**FOR**

**YEAR ENDING SEPTEMBER 30, 1914**





## SPECIAL MEETING.

DECEMBER 17, 1913.

Called to order by President Davis at 1:00 p. m.

Present: Davis, Boyers, Sutton, Hurty.

The president announced the special meeting was called to consider the New Albany water works question, also to consider the proposed rules governing the sanitation of schoolhouses, and to consider any other matters which might be brought before the board.

### NEW ALBANY WATER MATTER.

The order of the State Board of Health was served upon the New Albany Water Company to appear before the State Board of Health at a special meeting, December 17, to show cause, if any, why an order should not be issued by the State Board of Health requiring the installation of an adequate filtration plant. Mr. Charles Smith, attorney representing the New Albany Water Company presented the following brief:

### STATE OF INDIANA,

BEFORE THE STATE BOARD OF HEALTH OF INDIANA AT THE CITY OF INDIANAPOLIS.

*To the Honorable The State Board of Health for the State of Indiana:*

The undersigned, The New Albany Water Works, at all times reserving to itself all and all manner of right of objection to the jurisdiction of this honorable body to make any order requiring this respondent "to construct and install an efficient water filtration plant" as suggested in the notice to show cause served upon it, but denying such jurisdiction, for the reasons hereinafter set forth, would respectfully represent and show to your honorable body:

That heretofore, to wit, on the 15th day of August, 1904, the common council of the city of New Albany passed a certain ordinance, authorizing and empowering this respondent to maintain a system of water works in and for the city of New Albany and to supply said city and its inhabitants with pure and wholesome water, upon the terms and conditions therein set forth and among other things setting forth and presenting the rates which this respondent might charge for water by it supplied to consumers for the period of twenty-five years, under the system of water works then in contemplation by both the city of New Albany and this respondent, which did not include but excluded, a filtering plant or other plant for

the purification of the water to be furnished under the terms of said ordinance. And in contemplation that it might become necessary or advisable to require the installation of a filtrating plant, it was by Section 10 of said ordinance provided:

"Section 10. If at any time during the continuance of this contract and the franchise therein contained, the city of New Albany shall deem it advisable and expedient to require the New Albany Water Works to install a filtering plant or other plant for the purification of the water furnished by said New Albany Water Works under the terms of this ordinance, said city of New Albany reserves the right to submit such question of the expediency and propriety of establishing a system of filtration or purification to the citizens of the city of New Albany; and shall by ordinance or resolution provide that said question shall be submitted to the legal voters of said city at any general city election; and should a majority of the legal voters of said city cast their votes in favor of the establishment of such filter or purification plant, then the said city of New Albany through its common council shall have the right and authority to require the said New Albany Water Works within a reasonable time thereafter, to erect, establish and maintain such suitable and proper plant and system for the filtration or purification of the water furnished by said New Albany Water Works, of such capacity and character as shall effectively purify said water: Provided, however, That when said New Albany Water Works shall, in compliance with such resolution, erect and put in operation such plant for the filtration or purification of the water, that thereupon the said New Albany Water Works shall be authorized to increase its charges for water for domestic and manufacturing purposes ten per centum upon the amounts fixed by this ordinance, such increased rates to continue in force during the operation of the filtering system but not to extend beyond the period of this contract; but no increase shall be made in the price charged for fire hydrants."

A copy of which ordinance is filed herewith and made part hereof as Exhibit A.

And this respondent further shows to your honorable body, that within ten days after the passing of said ordinance it duly accepted all the terms and conditions of said ordinance, and thereupon such ordinance became a contract between it and said city of New Albany.

This respondent further shows, that it has always been willing and ready, and now stands ready and willing to construct and install an efficient water filtration plant, under and according to the terms of said agreement; and that said city of New Albany has at all times had it within its power to require this respondent to install such filtrating or other plant for the purification of the water to be furnished its consumers in the manner provided in said contract. But said city of New Albany has never required by said ordinance taken any step to submit the question of such construction of such plant to the voters of said city and no such vote has been taken.

That to construct and install such filtration plant would require this

respondent to lay out and expend a very large sum of money, to wit, not less than eighty-five thousand dollars, as it is informed and believes.

And this respondent further shows, that inasmuch as your honorable board has no power or authority to fix or establish any rate or charge for furnishing water to consumers after such filtration plant shall have been constructed, and inasmuch as said city of New Albany might assert and claim that if such filtration plant was constructed in any other manner than as a result of the action of the city council of New Albany, and of the legal voters of said city, this respondent could not charge the additional rates prescribed by said Section 10, but only such rates and charges as were prescribed by Section 5 of said ordinance, the action of your honorable board might result in requiring this respondent to make such large expenditure of money without any return whatever upon its investment, contrary to the constitution of the United States and of the State of Indiana.

*Wherefore*, This respondent prays your honorable body to proceed no further in this matter than to remit the same to the common council of the city of New Albany, to proceed under the terms of said ordinance.

NEW ALBANY WATER WORKS Co.,

By Smith, Hornbrook & Smith,

Its Attorneys.

Chester P. Wilson being duly sworn upon his oath says, that he is president of the New Albany Water Works, and has authority to make this affidavit on its behalf. That he has read the foregoing answer to the rule to show cause and that he knows the contents thereof. That the matters and facts therein stated are true, except as to such matters as are stated upon information and belief, and as to all such matters he believes them to be true.

CHESTER P. WILSON.

State of Indiana, Marion County, ss:

Subscribed and sworn to before me, Maud B. Drischel, the undersigned, a notary public in and for said county and State, this 16th day of December, 1913.

[Seal.]

MAUD B. DRISCHEL,

Notary Public.

My commission expires of the 3d day of June, 1916.

Hon. M. C. Thornton, of New Albany, was present, and announced that he voluntarily represented the city of New Albany, that he was the author of the act known as Chapter 35 of the Acts of the Indiana Legislature of 1913; that he appeared before the State Board of Health in the interest of the public health of the citizens of his city. Mr. Thornton argued in effect that the law made it mandatory upon the State Board of Health, if it believed the water supply of New Albany was bad, to issue an order requiring said company to install a filtration plant. In conjunction with his contention, he quoted the law as follows, the extract being taken from Section 1:

"After such hearing, if the State Board of Health shall determine that improvements or changes are necessary in the works or plant of the offender to render the public water supply pure and healthful, it shall notify such municipality, corporation or other person operating said water supply or works to make such change as the State Board of Health may recommend with respect to the works, or to the sources of the water supply as will render the water pure and healthful to the satisfaction of the State Board of Health, which changes shall be made within a reasonable time to be fixed by the State Board of Health."

After consideration the following order was adopted:

**ORDER REQUIRING THE NEW ALBANY WATER COMPANY OF THE CITY OF NEW ALBANY, INDIANA, TO CONSTRUCT AND INSTALL A FILTRATION PLANT.**

WHEREAS, The State Board of Health of Indiana, having been legally petitioned therefor, has made a survey and investigation of the public water supply of the city of New Albany, Floyd County, Indiana, and has found and determined that said public water supply is impure and dangerous to health and that said public water supply is not filtered; and, after a hearing as provided by law, said State Board of Health finds and determines that a complete and efficient filtration plant is necessary to be constructed by the New Albany Water Company, which operates said water supply, to render said public water supply pure and healthful;

Said New Albany Water Company is ordered to install an efficient water filtration plant and so conduct the same as to render the water furnished said city by said water company pure and healthful, to the satisfaction of the Board of Health. Said filtration plant is ordered to be installed and put in operation on or before the 31st day of December, 1914.

**NOTICE.**

*To the New Albany Water Works Company:*

You are hereby notified to install an efficient water filtration plant, on or before December 31st, 1914, for the public water supply of the city of New Albany, Floyd County, Indiana, so as to render the water furnished by said company pure and healthful, to the satisfaction of the State Board of Health.

*Ordered:* The Secretary shall be a delegate to and represent the State Board of Health at the National Conference on Race Betterment to be held in Battle Creek, January 8, 9, 10, 11, and 12, 1914, his expenses to be paid out of the general appropriation of the Board.

## RULES GOVERNING SANITATION OF SCHOOL BUILDINGS.

The following rules were considered section by section, and adopted one section at a time, and finally were adopted as a whole.

### RULES AND REGULATIONS OF THE INDIANA STATE BOARD OF HEALTH GOVERNING THE CONSTRUCTION, EQUIPMENT AND MAINTENANCE OF SANITARY FEATURES OF PUBLIC AND PAROCHIAL SCHOOL BUILDINGS.

Passed by the Indiana State Board of Health, December 17, 1913, as appears in the minutes of the Board according to Chapter 144, Acts 1909, and duly promulgated as required by statute.

#### CHAPTER 144, ACTS 1909, PART OF SECTION 6.

“The State Board of Health shall have supervision of the health and life of the citizens of the State and possess all powers necessary to fulfill the duties prescribed in the statutes and to bring action in the courts for the enforcement of health laws and health rules. They shall have power \* \* \* to regulate and prescribe the character and location of plumbing, drainage, water supply, disposal of sewage, lighting, heating and ventilation, and all sanitary features of all public buildings and institutions, \* \* \* and any violation of said rules shall be punished by a fine of not less than five nor more than fifty dollars for each offense.”

Attest: J. N. HURTY,  
Secretary.

1. *Site:* Schoolhouse sites shall be convenient of approach from the public road or street. An elevation shall be obtained, if possible, but if the site must necessarily be low, or even level, surface drainage and subsoil drainage, and filling if needed, shall be provided.

a. *Surroundings*—The site shall not be nearer than 500 feet to any of the following conditions, to wit: Swampy ground, body of stagnant water, cemetery, slaughter-house, fertilizer reduction plant, any business or manufacturing establishment which engenders noxious odors or vapors, or anything which pollutes the surrounding atmosphere, as gases, smoke or dust, or any place of industry where disturbing noises prevail.

b. *Area*—No school site shall have an area less than one acre, and wherever possible shall have an area of two acres

or more. The school playground shall have an area of at least 30 square feet for each pupil. The playground shall be well drained, well graveled, free from depressions in which water can stand, and shall be equipped with such apparatus as will encourage and afford wholesome exercise and recreation. For the purpose of inculcating a love of the beautiful and imparting practical knowledge concerning the growth and care of plant life, that part of all school grounds not occupied by buildings and playground should be laid out according to an approved plan in lawn and garden with shrubs and shade trees.

2. *School Building*: No school building shall be constructed more than two stories above the basement.

a. *Basement*—In every building in which the lower or basement floor is below the surface of the ground surrounding such building and is used in part or as a whole for heating and ventilating apparatus, such lower floor shall be considered the basement story of such building.

b. *Size of Class Rooms*—No class room shall exceed 24 feet in width. The ceiling shall be not less than 12 feet nor more than 14 feet in height. Wood ceilings shall not be used. Where metal ceilings are used, they shall be of a plain stamped panel design with profile not greater than  $\frac{1}{8}$  inch and with accurate joints securely nailed at every nailing point. Metal ceilings shall be put upon wood strips or sheathing of not less than  $\frac{3}{8}$  inch thickness, with insulating paper of not less than  $\frac{1}{4}$  inch thickness between the joists and such strips or sheathing. The metal cove and cornice shall be of plain design and shall be securely nailed to cornice block or ground of wood at intervals not greater than 4 feet. The cornice block or ground shall be securely fastened to the side wall and ceiling. The lower part of such metal cornice shall be connected to the side wall by means of wooden ground or mold in such way as to give a smooth finish and prevent the collection and retention of dust and dirt. Metal ceilings shall be painted a neutral color with flat coat paint and with particular attention given to filling of joints. Wall paper shall not be used in any school building.

c. *Corridors and Doorways*—Main corridors, passageways, hallways and exit doorways shall be equivalent in

width to at least 24 inches for each one hundred, or fractional part thereof, of seating capacity of such portions of the building as will be required to use the same for exit. No corridor, passageway or hallway, shall be less than 5 feet in width, and no doorway shall be less than 3 feet in width except where two or more doors, each 2 feet 8 inches or more in width, are grouped together.

d. Floors—The floors of toilet rooms, basement rooms not used for class purposes, and inclosures for plumbing fixtures and steam fittings within the building shall be of non-absorbent waterproof material with nonabsorbent waterproof base not less than 6 inches high, and nonabsorbent waterproof sanitary cove. Wherever possible, the floors of laboratory rooms, domestic science rooms and corridors shall be of nonabsorbent waterproof material with nonabsorbent waterproof base, not less than 6 inches high, and nonabsorbent waterproof sanitary cove. Cement floors shall be constructed with a mixture of iron compound or other equally efficient material, or shall be covered with cement enamel in order to render such floors waterproof and dust proof. Mattings or other floor coverings shall not be used in any part of the school building except in superintendent's or principal's office, rest rooms, libraries and teachers' rooms, or upon inclines when same are used in the building.

e. Plastering—The plastering at all angles, in all corners and at all windows and door jambs, shall be so rounded and coved as to prevent the collection and retention of dust.

f. Equipment Rooms—Furnace, boiler and storage rooms shall be of fireproof construction. No storage room closet shall be placed under any stairway. No boiler, furnace, heater or heating coils shall be located directly beneath any entrance, exit, corridor or stairway. The ceiling floor immediately above all furnaces, boilers or heaters, shall be of fireproof construction, and in old buildings shall be rendered and maintained fireproof.

g. Entrance and Exit Doors—Entrance and exit doors shall be equipped with automatic opening device and with hardware of such kind as to be always unlockable from within. Revolving doors shall not be used. All doors shall open outward, and where double doors or storm houses are provided, the outer doors shall be devoid of fastenings but



shall be held in place by spring hinges. All entrance and exit doors shall be unlocked at all times when school is in session.

h. *Interior Wood Finish*—All interior wood finish shall be as small as possible, and shall be so constructed and finished as to minimize or prevent the collection and retention of dust and dirt.

i. *Location*—No outside wall of any school building shall be nearer than 5 feet to any lot line of adjoining property.

j. *Roof*—The roof of all school buildings shall be constructed of slate or other equally efficient waterproof, non-combustible material.

3. *Lighting*: No window sash shall have more than four lights and the tops of all windows shall be square. Whenever the proximity of other buildings or a portion of the same building interferes with the proper lighting of a class room, the light shall be properly projected and diffused by the use of prism glass. When artificial lighting by means of electricity or gas is used, the lights shall be near the ceiling, and the light shall be properly projected and diffused by either indirect or semi-indirect system of lighting. In case of electricity being used for light, all wiring shall be installed in iron conduit and all wires, fittings, materials and construction work shall conform to the Rules and Requirements of the National Electrical Code, as recommended by the National Fire Protection Association for such class of wiring. Any system of artificial lighting aside from electricity as provided above shall be approved by the Indiana State Fire Marshal.

4. *Heating and Ventilation*: "Heating and ventilating systems of all kinds shall take fresh air from outside the school building, evenly diffuse the same throughout each schoolroom during school session and withdraw foul air from said schoolroom at a minimum rate of 1,800 cubic feet per hour for each 225 cubic feet of said schoolroom space, regardless of outside atmospheric conditions."

a. *Test*—The State Board of Health will test the efficiency of ventilating systems in school buildings as follows: With jacketed heaters and gravity systems, the anemometer test shall be made over the foul air vents in classrooms. With plenum systems, the anemometer test shall be made over the fresh air inlet of the fresh air room and the fresh air inlet in classrooms. With a double system of mechanical

ventilation, the anemometer test shall be made at the fresh air intake and at the foul air vents in classrooms. In every test five readings shall be taken, one near each corner and one at the center of the air-opening to be tested. A deduction of 5 per cent. shall be made for a grill or register in the air opening. All tests shall be based upon the seating capacity of classrooms at 225 cubic feet of space per pupil. Before such test shall be made by the State Board of Health, the heating and ventilating contractor shall be given notice of the time when such test is to be made. The State Board of Health will make such tests upon the written request of trustees, school boards, boards of school commissioners, county, city or state superintendents, or upon petition of ten or more patrons of the school.

5. *Stoves and Heaters:* In small buildings where furnace or steam heat with fresh air from outside the building is impracticable, stoves or floor furnaces of suitable size and construction surrounded by heat proof metal jacket with open top, with fresh air intake from outside the building and foul air flue shall be installed. The heater shall be of sufficient capacity to secure and maintain a uniform temperature of 70 degrees F. in zero weather.

6. *Jacket:* The jacket shall be made of heavy galvanized iron, black iron or other material equally durable and shall be lined with sheet asbestos. There shall be an inner jacket of tin or other metal equally efficient with air space of not less than  $\frac{1}{4}$  inch between the jackets. The jacket shall stand not less than 3 inches from the stove or floor furnace, and may extend either to the tray, floor shield or other foundation upon which the heater rests, or the lower 12 inches of the jacket may be open. If the jacket extends to the floor shield, the lower 12 inches of the jacket may have sliding or hinged doors to open and permit of recirculation of air when necessary to heat the room quickly.

The fresh air duct shall be provided with damper with operating device in plain view and easily accessible from inside the room.

7. *Dimensions of Flues, Fresh Air Ducts and Vent Pipes in Jacketed Heaters.*

a. Following is a table giving the size of flue, fresh air duct and vent pipe to be used in a system having the same flue for smoke and foul air.

TABLE I.

Contents of room in cubical feet	8,000 and less	8,000 to 12,000	12,000 to 16,000
Cross sectional area of chim- ney not less than .....	144 sq. in.	256 sq. in.	400 sq. in.
Diameter of vent pipe not less than .....	12 in.	16 in.	200 in.
Free area of foul air vent not less than .....	144 sq. in.	256 sq. in.	400 sq. in.
Cross sectional area of fresh air duct not less than .....	144 sq. in.	256 sq. in.	400 sq. in.

b. Dimensions of flues, foul air flues and fresh air ducts to be used in connection with a system having separate flues for smoke and foul air.

TABLE II.

Contents of room in cubical feet	8,000 or less	8,000 to 12,000	12,000 to 16,000
Cross sectional area of smoke flue not less than .....	64 sq. in.	96 sq. in.	144 sq. in.
Cross sectional area of vent flue not less than .....	189 sq. in.	525 sq. in.	651 sq. in.
Free area of foul air vent not less than .....	189 sq. in.	525 sq. in.	651 sq. in.
Cross sectional area of fresh air duct not less than .....	144 sq. in.	256 sq. in.	400 sq. in.

Where an old building contains a flue vent larger than that required for new buildings, the vent opening may be reduced to the minimum area required for new buildings.

8. *Smoke Pipe:* No smoke pipe connection between the heater and the smoke flue shall be more than five feet long, measuring horizontally. No metal, tile or other smoke pipe shall extend through the walls, ceiling or roof in any manner, except as prescribed in these rules.

9. *Chimney and Ventilating Flue:* Each room in which a jacketed heater is installed shall be provided with a masonry stack, either with single flue for smoke and foul air, or with separate flues for the same. Double flue chimneys shall not be used unless the same are entirely within the building with no wall exposed to the outside. Double flue chimneys shall be built of masonry with one compartment for smoke and one for ventilation with the dividing wall not more than four (4) inches thick, and with the inside of all walls plumb, true and finished to a smooth finish.

a. *Metal Stacks*—In lieu of a dividing wall, a metal stack of not less than No. 16 gauge, noncorroding metal, or stack of glazed tile of not less than 1 inch thickness may be constructed within the masonry chimney. Such stack may be used for smoke, shall rest on the foundation of the chimney for support, shall be held in place by metal side braces, and the smoke shall enter such stack at the usual smoke pipe height.

b. *Mixing Chamber*—Where the same flue is used for both smoke and foul air, a suitable drum or mixing chamber shall be used for bringing the smoke and foul air together, in order to insure proper draft in both foul air flue or pipe, and in smoke pipe. In no case shall the cross-sectional area of the mixing chamber or of the space surrounding the smoke pipe in the drum, be less than the cross-sectional area of the flue. The foul air may be taken out through a metal pipe extending from within six inches of the floor and connected with the smoke pipe through the drum before entering the flue, or may be taken directly through register or registers in the base of the flue.

c. *Register*—The bottom of register faces shall be at the floor level, and the free area of the register, after deducting five per cent. for grill, shall equal the cross-sectional area of the flue. Where the chimney projects into the room, registers may be placed on two sides in order to reduce the height of the registers. Cleanouts, accessible from the room, shall be provided for all flues and drums. A suitable

damper with operating device in plain view and easily accessible from the room shall be provided so that vent flues can be shut off when not in use.

d. Wherever possible, the heater and chimney shall be located at the same end of the room as the entrance door.

In buildings of more than one room, when the same flue is used for both smoke and foul air, each room shall be provided with a separate chimney. When separate compartments for smoke and foul air are used, each room shall be provided with separate vent flue, but the same smoke flue may be used to accommodate not more than two rooms, and such flue shall have a cross-sectional area of not less than 144 square inches.

10. *Systems Permissible in Portable Buildings or in Old Building About to be Abandoned:* A system with a metal smoke pipe placed within a metal vent flue extending above the highest point of the roof may be permitted in portable buildings, and in old one-story buildings, when said old building is to be used for a period of not more than two years after such system is installed. The smoke pipe used in such system shall be of extra heavy material; the elbow inside the vent flue shall be of cast iron; the smoke pipe shall be supported from the vent flue by steel supports placed at intervals of not more than three feet; the vent flue shall be provided with an asbestos lined collar, with at least one inch air space between the collar and vent flue where the same passes through the roof or ceiling, and shall be properly flashed and made water tight. Complete plans and specifications covering such system shall be submitted to, and approved by the State Board of Health before the same is installed.

11. *Portable Buildings:* Portable frame buildings, not larger than 28 x 36 feet, and not more than one story in height, may be erected, provided the plans and location for such temporary building shall be approved by the State Board of Health, and provided such temporary building shall not be maintained on any one lot or block for a longer period than two years.

12. *Plenum and Gravity Systems of Ventilation:* Where plenum systems of ventilation are used, the warm air flues shall have a cross-sectional area of not less than 10 square inches for each occupant of the room, based on the seating capacity of the room. The vent flues shall have a cross-sectional area of not less

than 10 square inches for each occupant of the room, based on the seating capacity of the room.

Where gravity systems of ventilation are used, the warm air flues and vent flues shall each have a cross-sectional area of not less than 16 square inches for each occupant of the room, based on the seating capacity of the room.

a. *Location of Flues*—In school buildings of more than one room with plenum or gravity ventilation the warm air flues and vent flues shall be on or in the inside walls of the building, and the warm air inlets and the foul air vents shall be on the same side of the room. Warm air inlets shall be located not less than 5 feet from the floor. Wire screens of No. 8 gauge wire with  $1\frac{1}{2}$ -inch mesh may be used to cover the warm air inlets, except in rooms of such size and shape as to require the air to be deflected, in which case diffusers may be used. Foul air vents shall be at the floor level, shall have a free area of not less than the cross-sectional area of the flue, and shall be clear of all obstructions. Grills or registers shall not be used in foul air vents except with jacketed heaters. A chain damper, or other approved device, in plain view and easily accessible from inside the room shall be used to close the vent when not in use. The damper shall be kept open at all times when school is in session. The floor and baseboard shall be carried into the bottom of vent flue, and that part of the flue exposed to view shall be plastered and finished the same as the walls of the room.

13. *Reheated Air*: No vitiated air shall be reheated except as provided under jacketed heaters and floor furnaces, or except where an air washing system has been installed, and such system of re-washing and reheating air has been approved by the State Board of Health.

14. *Foot Warmers*: So-called foot warmers, if used, shall be placed in the walls of the main corridors at the floor level. No warm air register or pedestal register shall be placed in the floor in any school building.

15. *Air Supply*:

a. In gravity or plenum systems of ventilation, except where wall openings directly into schoolrooms are used, the air supply shall be taken from outside the building through

a window or windows into a room in the basement especially constructed for this purpose, with tight fitting door, impervious and smooth walls, floor and ceiling, to be known as the fresh air room. The window or windows in the outer wall of the fresh air room shall have a free area not less than the combined cross-sectional area of all the warm air supply ducts, and shall be covered with a substantial wire screen of not more than  $\frac{1}{2}$ -inch mesh and shall be kept free from obstruction. This fresh air room shall be kept clean and free from obstruction at all times. In no case shall basement air be permitted to enter the air supply.

b. In gravity systems where wall openings directly into the rooms are used, the fresh air supply shall be from outside the building, and the combined free cross-sectional area of fresh air intakes shall be not less than the cross-sectional area of foul air flue. Such fresh air intakes shall be free from obstruction, and shall be provided with an approved damper with operating device in plain view and easily accessible from inside the room. The damper shall be kept open at all times when school is in session. The outside openings of such fresh air intakes shall be covered with substantial wire screen of not more than  $\frac{1}{2}$ -inch mesh, and shall be provided with a suitable hood or elbow to protect from rain or snow.

c. With jacketed heaters the fresh air supply shall be from outside the building, and the fresh air duct shall be provided with an approved damper with operating device in plain view, and easily accessible from inside the room.

d. No fresh air opening or foul air vent in connection with any system of ventilation shall be closed at any time when school is in session.

e. No part of the machinery, shafting, or pulley arrangement, of heating and ventilating apparatus, or water works system, shall be connected to the joist or flooring above.

f. All flues shall start upon substantial foundation at the ground, shall extend through the attic and above the highest point of the roof, and, when necessary, shall be equipped with proper cowls to prevent down draft. Flues shall be built the same size the entire height, and all inside walls shall be plumb, true and finished to a smooth finish. The outside walls of all chimneys shall be not less than 8 inches thick.

16. *Cloakrooms and Wardrobes:* Where cloakrooms or wardrobes are not separated from classrooms, or are separated only by skeleton doors, they shall be considered as part of the classroom, and the foul air vent shall be placed in the cloakroom or wardrobes. Where cloakrooms or wardrobes are separated from classrooms, they shall be separately heated and ventilated the same as classrooms. Where suitable cloakrooms cannot be provided, sanitary steel lockers may be placed in the corridors or classrooms, provided that such lockers will not in any way become an obstruction to the free passageway of the corridor.

17. *Ventilation in Laboratory and Domestic Science Rooms:* Gas plates, gas stoves and burners used in domestic science or laboratory work shall be provided with suitable ventilating hoods connected with a vertical vent flue. This flue shall be separate from any other vent flue and the updraft in such flue shall be positive at all times.

18. *Temperature Regulation:* Whenever practical, temperature regulation shall be used.

Whatever system of ventilation is used, the windows in all school-rooms shall be opened whenever practical at recess periods and before the opening of the afternoon school session in order to thoroughly change the air of the rooms.

19. *Basement Air:* In every stairway leading from the first floor to the basement, there shall be a swinging door with spring hinges to prevent basement air from entering the classrooms and corridors above, except where basement rooms are finished, have close fitting doors and are properly warmed and ventilated.

20. *Water Supply:* Open or dug wells, or springs, shall not be used. No well shall be within 100 feet of any privy, cesspool, or other known possible source of contamination. The water supply of every school shall be tested by the State Board of Health from sample submitted by the school trustee, school board, or the local health officer, whenever in the opinion of the local health officer such test shall be necessary, or whenever the State Board of Health shall require such test.

a. *Drinking Fountains*—Where pressure water supply is available, sanitary drinking fountains shall be installed. Such drinking fountains shall be of the bubbling stream type and shall have vitreous china cup with two or more port holes so the user must drink from the bubbling stream. The



construction of the sanitary head shall be such that when the finger is placed over the nozzle, the water passes to the waste through the ports provided for that purpose.

21. *Lavatories:* Every schoolhouse shall be provided with substantial enameled iron sinks or washbasins, soap and sanitary paper or individual towels. Common or roller towels shall not be used. Lavatories shall be of cast iron porcelain enameled, or vitreous china. Where wall trap lavatory with back is used, it must be all in one piece. All traps shall be cast brass with cleanout with ground joints on sewer side of fixture.

22. *Floor Drains:* In all school buildings where a sewer outlet is practicable, the toilet rooms, washrooms, boiler and furnace rooms shall be provided with floor drains connected with such sewer outlet. These floor drains shall be conveniently located with the floor sloping to the drain from all parts of the room. Whenever domestic science rooms and laboratories have waterproof floors, and sewer outlet is practicable, these rooms shall also be provided with floor drains as above. In boys' toilet rooms the urinal trough may be used as the floor drain.

23. *Toilets:*

a. *Flush Toilets*—Where a sewer system or pressure water supply is available or practicable, water-closets to the number of one seat for each fifteen females, or fractional part thereof, and one seat for each twenty-five males, or fractional part thereof, and one urinal stall for each fifteen males, or fractional part thereof, shall be installed. In estimating the number of closets to be installed, the occupants shall be divided as follows: 40 per cent. males and 60 per cent. females. Where the syphon type of closet is used, it shall be provided with seat action flush with working parts of sufficient strength to withstand rough usage. Closets having any working parts of valve or any metal parts inside of bowl shall not be used. All receptacles used for water-closets and urinals, except as otherwise provided in these rules, shall be vitrified earthenware, hard natural stone, glass or cast iron porcelain enameled on the inside. If cast iron is used, it shall be enameled or painted on the outside with at least three coats of nonabsorbent and noncorrosive paint.

b. *Latrines*—Where latrines are used, they shall be provided with cast iron automatic dumping tanks to hold not

less than 10 gallons of water, and arranged so the closets will be flushed at intervals of not longer than 15 minutes. The entire volume of water shall be delivered at once at one end of the range, passing through the entire length of the same and discharging at the other end through the sewer trap. The bottom of the latrine shall have a depression under the center of each seat at least  $1\frac{1}{2}$  inches deep to retain water at all times.

c. **Ventilation of Toilets**—There shall be a ventilating opening back of each individual water-closet bowl and each seat of the latrine of not less than 10 square inches free area, and each urinal stall shall have a ventilating opening both top and bottom of not less than 8 square inches free area. These toilet ventilating openings shall be connected to a vertical brick vent flue extending above the highest point of the roof. The updraft in this flue shall be positive at all times and shall be maintained either by aspiration or by use of an exhaust fan. If aspiration is used, the cross-sectional area of this toilet vent flue shall be not less than 360 square inches. If an exhaust fan is used, the cross-sectional area of this toilet vent flue shall be equal to the combined area of the toilet ventilating openings connected with such flue.

Whenever proper ventilation of the toilet room is not provided by means of the closet system installed, the toilet room shall be properly ventilated by means of a separate vent flue.

d. **Equipment of Toilets**—All closets shall be equipped with wooden seat top lids. All urinals shall be constructed of materials impervious to moisture and that will not corrode, and shall be divided into stalls not less than 16 inches nor more than 20 inches in width. Long hopper water-closets and similar appliances shall not hereafter be installed in any school building.

When toilets are located in the basement, they shall be separated as to sexes by solid, sound proof wall and shall be approached by separate stairways and separate passageways. Boys' toilets shall be clearly marked "Boys' Toilet", and girls' toilets shall be clearly marked "Girls' Toilet."

**24. Indoor Crematory Closet:** Whenever a sewer system or pressure water supply is not available or practicable, an indoor

crematory sanitary closet system may be provided with the same number of seats and urinal stalls as specified for water-closets. If an indoor crematory sanitary closet is used, the vault of same shall be constructed of brick with cement floor, properly drained. The vault heater, gratings, floors and stools shall be made of cast iron. The urinals shall be constructed of enameled iron, vitrified earthenware, slate, marble or glass, and shall have a ventilating opening both at top and bottom of not less than 8 square inches free area. The seat shall be made either of wood or aluminum, and if wood seats are used the underside of the same shall be lined with metal. The lids of the seats shall be provided with a self-closing device. Such closets shall be connected to a vent flue or stack with a free cross-sectional area of not less than 60 square inches for each closet seat and each stall of urinal, to which stack shall be connected a stack heater. Fire must be kept in both the stack heater and the vault heater at all times when school is in session in order to maintain a positive updraft in the stack and to destroy the contents of the vault.

25. *Dry Closets:* So-called dry closets shall not hereafter be used in any school building.

26. *Outdoor Sanitary Closets:* If an outdoor sanitary closet system is used, the vault receptacle and floor of such closet shall be of cement construction. Dry loamy earth, wood ashes, sifted coal ashes or slaked lime shall be thrown in the vault receptacle at least once each day when school is in session, and the contents of the vault shall be removed at least twice in each school year. All outdoor closets shall be kept effectually screened and protected against flies. The interior walls of such closets shall be sided with corrugated metal sheathing, painted a drab color and sanded while the paint is still wet.

In the boys' closet a urinal of metal, cement or other nonabsorbent material with stalls shall be constructed and made to discharge through a proper drain into the soil away from the closet and not nearer than 100 feet to any source of water supply.

27. *Seating:* Class and study rooms shall have aisles on all wall sides. In primary rooms, center aisles shall not be less than seventeen (17) inches wide, with wall aisles not less than twenty-eight (28) inches wide. In grade rooms, center aisles shall be not less than eighteen (18) inches wide, with wall aisles not less than thirty (30) inches wide. In high school rooms, center aisles shall

be not less than twenty (20) inches wide, with wall aisles not less than thirty-six (36) inches wide. All groups of seats shall be so arranged as to have an aisle on either side.

28. *Stairways:* Stairways shall be equivalent in width to at least 18 inches for each 100 of seating capacity, classrooms and assembly rooms included. No stairway shall be less than 5 feet in width in the clear except where more than two stairways lead down from any floor, in which case stairways 4 feet in width in the clear may be counted in the total width of stairs required. Stairways shall be constructed with straight runs, changes in direction being made by landing, the width of which shall be not less than the width of the stairs. Stairways shall be constructed with uniform rise and tread. The riser shall be not more than  $6\frac{1}{2}$  inches and the tread not less than 11 inches, which dimensions shall be from tread to tread and from riser to riser. No door shall open immediately upon a stairway, but a landing at least the width of the door shall be provided between such door and stairway.

To overcome any difference in floor levels requiring less than three risers, gradients shall be employed with not more than one inch rise in each 12 inches of run.

Stairways, corridors and all passageways leading to exits shall be kept free from obstruction at all times, and shall not be used for storage or any other purpose except ingress and egress, except as herein provided for sanitary lockers.

The walls connecting entrance and exit doorways to stairways shall extend directly from the edge of doorway to stairway with a slight curve instead of an angle and corner.

29. *Inclines:* Whenever possible, and especially in large school buildings, the stairway should be superseded by the incline. "In practice we make the three-foot child take the same steps as the six-foot man. This is both unjust and unwise. The incline permits the short and the tall, the weak and the strong, to take such steps as best suit the individual pupil." The incline is more serviceable, safer and better in every way than the stairway.

30. *Foundation:* Foundations shall not be laid on filled or made ground or on any soil containing a mixture of organic matter.

31. *Humidity of Air:* Whenever practicable a system of air washing shall be installed in connection with plenum and gravity systems of ventilation in order that the air may be properly humidified before being introduced into the schoolroom. Where the air

supply is direct to the schoolroom, through wall openings, each radiator shall be provided with a pan or receptacle to hold not less than one gallon, and so placed as to be constantly warmed and in plain view. Water shall be kept in such receptacle at all times when school is in session and the heating system is in use.

Jacketed heaters and floor furnaces shall be provided with a pan or receptacle to hold not less than three gallons, and so placed as to be constantly warmed and in plain view. Water shall be kept in such receptacles at all times when school is in session and the heater is in use.

32. *Cleaning and Sweeping:* Whenever practicable, vacuum cleaning equipment shall be installed in school buildings. Dry sweeping and dusting is prohibited, and no sweeping shall be permitted in corridors, schoolrooms or stairways while school is in session. Floor oil, some form of dust-down or sawdust treated with oil should be used on floors before sweeping.

33. *Directions for Management:* Whenever a system of heating and ventilation is installed, the heating contractor shall furnish full and complete printed instructions for the proper management and care of such system to the superintendent, principal or teacher of the school, and shall in addition post a copy of such instructions in a prominent place in the boiler or furnace room for the instruction of the janitor.

34. *Power:* Where an electric motor is installed for power purposes the wiring shall be installed in iron conduit and the wiring, fittings, materials, and construction work shall conform to the Rules and Requirements of the National Electrical Code. Where gasoline engines are installed for power purposes they must be located in a room of fireproof construction and must have the muffler or exhaust pot located at least 50 feet from the outside wall of the building and the installation of such gasoline engine must conform to the Rules and Regulations of the State Fire Marshal. The storage of inflammable liquids for gasoline engines must conform to the Rules and Regulations of the State Fire Marshal for the use, handling and storage of inflammable liquids.

35. *Heating:* The heating apparatus and appliances not otherwise provided for in these rules must conform to the Rules and Regulations of the State Fire Marshal.

36. *Fire Protection:* On each floor, including basement, there shall be placed at least one 3-gallon chemical fire extinguisher at

a readily accessible point. In large buildings where the area of each floor exceeds 6,000 square feet there shall be placed on each floor a 3-gallon chemical extinguisher for each 3,000 square feet of floor area. In cities having fire departments provided with a central fire alarm system, there shall be installed in a readily accessible place on the first floor of each school building a fire alarm box connected directly with fire headquarters. This box shall be supplied with a key protected by a glass door.

37. Stereopticons and motion picture machines when installed must conform to the Rules and Regulations of the State Fire Marshal.

38. Architects shall furnish heating and ventilating contractors full and detailed plans of all parts of the building in any way connected with the installation of heating and ventilating apparatus. Architects, sanitary engineers and heating and ventilating engineers shall certify by affidavit endorsed on all plans and specifications submitted, that such plans and specifications comply with the Indiana Sanitary School House Law, and with the rules of the Indiana State Board of Health.

#### **RULES AND REGULATIONS OF THE INDIANA STATE BOARD OF HEALTH GOVERNING THE EQUIPMENT AND MAINTENANCE OF SCHOOL HACKS.**

1. The term school hack as used herein shall include all wagons, hacks and other vehicles of any kind whatsoever, used for public transportation of pupils to and from school.

2. School hacks shall be substantially built, painted throughout, well lighted, warmed and ventilated, clean and sanitary, kept in good repair and shall be operated and maintained with strict regard to the influence of such school hacks upon the health, morals and safety of the pupils thus transported.

3. All school hacks shall be swept and dusted thoroughly at least once each day, and in addition shall be specially cleaned and disinfected before being put in use at the beginning of school, and again at the time of Christmas vacation. Such special cleaning shall consist of first sweeping and dusting the interior, then scrubbing the floor, washing the windows and all interior wood work, including the seats, and then disinfecting the interior according to the rules of the State Board of Health.

4. The number of pupils to be transported in any school hack shall be limited to the normal seating capacity as provided in the construction of such hack. Every pupil must be provided with a comfortable seat without crowding.

5. All school hacks shall be constructed and arranged that the pupils shall be in plain view of the driver.

6. Proper foot rests shall be provided for the use of smaller pupils when the seats are too high to allow the feet to rest comfortably on the floor.

7. No person shall be employed as driver of a school hack who is not able-bodied, not of normal mind, or who is addicted to the use of intoxicants or habit forming drugs, or who has tuberculosis, or syphilis or other communicable disease, or who is uncleanly in person or clothing, or immoral in habit. The use of tobacco or alcohol in any form in or on a school hack by pupils or driver is prohibited.

8. Both school trustees and the drivers of school hacks shall be held responsible for the sanitary maintenance of such hacks and for the moral behavior of pupils while occupants of such hacks.

## INDIANA STATE FIRE MARSHAL DEPARTMENT.

(W. E. Longley, State Fire Marshal.)

### RULES AND REGULATIONS FOR THE CONSTRUCTION AND INSTALLATION OF CHIMNEYS AND FIREPLACES, SMOKE AND HEATER PIPES, STOVES AND RANGES.

Section 1. *Chimneys and Fireplaces.* In any building hereafter erected, altered or repaired, all chimneys shall be built of brick, stone or concrete. All chimneys shall have walls at least four inches thick and be lined on the inside with well-burnt terra cotta chimney tile set in Portland cement mortar. The lining shall be continuous from the bottom of the flue to its extreme height. Chimneys of all low pressure boilers or furnaces used in hotels or other large buildings, also the smoke flues for bakers' ovens, large cooking ranges and large laundry stoves, and all flues used for similar purposes shall be at least 8 inches in thickness and be lined continuously on the inside with well-burnt terra cotta chimney tile set in Portland cement mortar. All such chimneys shall be capped with terra cotta, stone, concrete or cast iron.

All chimneys shall project at least 3 feet above the point of contact with a flat roof, or 2 feet above the ridge of a pitched roof.

No chimney in any building shall have wooden supports of any kind, but shall be wholly supported by stone, brick, or iron starting from the foundation; and all chimneys which are dangerous from any cause shall be repaired and made safe or taken down.

All wooden beams or framework shall be separated at least 2 inches from the chimney, and no wooden furring shall be placed against any chimney; the plastering shall be directly on the masonry or on metal lathing.

The fireback of all fireplaces hereafter erected shall not be less than 8 inches in thickness of solid brickwork, nor less than 12 inches if of stone. When a grate is set in a fireplace, a lining of firebrick at least 2 inches in thickness shall be added to the fireback; or soapstone, tile or cast iron may be used if filled solidly behind with fireproof material.

**Section 2. *Smoke and Heater Pipes.*** No smoke pipe shall be placed nearer than 9 inches to any woodwork or to any wooden lath and plaster partition or ceiling.

Where smoke pipes pass through a wooden lath and plaster partition, they shall be guarded by galvanized iron ventilated thimbles at least 12 inches larger in diameter than the pipes, or by galvanized iron thimbles built in at least 8 inches of brickwork.

No smoke pipe shall pass through any floor or the roof of any building.

All heater pipes from hot air furnaces where passing through partition or floors must be doubled tin pipes with at least  $\frac{1}{2}$ -inch air space between them. No steam or hot water pipes shall be nearer than 1 inch to any woodwork. Every steam or hot water pipe passing through combustible floors or ceilings or wooden lath and plaster partitions shall be protected by a metal tube 1-inch larger in diameter than the pipe. All wooden boxes or casings enclosing steam or hot water heating pipes or wood covers to recesses in walls in which steam or hot water heating pipes are placed, shall be lined with metal.

I desire to express my hearty approval of the Rules of the State Board of Health pertaining to safety in school buildings and the same are hereby adopted by the State Fire Marshal Department.

W. E. LONGLEY,  
State Fire Marshal.



## THE SANITARY SCHOOLHOUSE LAW.

AN ACT to amend section one (1) of an act entitled "An act to protect the health and lives of school children and increase their efficiency by providing healthful schoolhouses, and requiring the teaching of hygiene," approved March 1, 1911, and repealing all laws in conflict therewith.

(H. 494. Approved March 14, 1913.)

## SCHOOLS—SANITARY BUILDINGS.

*Be it enacted by the General Assembly of the State of Indiana,* That section one (1) of the above entitled act be amended to read as follows: Section 1. That after the going into effect of this act all schoolhouses which shall be constructed in accordance and conform to the following sanitary principles, to wit:

(a) *Sites:* All sites shall be dry, and such drainage as may be necessary to secure and maintain dry grounds and dry buildings, shall be selected and supplied. Said site and said buildings shall not be nearer than 500 feet to steam railroads, livery stables, horse, mule or cattle barn used for breeding purposes or any noise-making industry or any unhealthful conditions. And when such school building or school site is so located and established no livery stable, horse, mule or cattle barn used for breeding purposes, or any noise-making industry or any unhealthful conditions shall thereafter be constructed, erected or maintained within 500 feet of any school building, school site or school grounds. Good dry walks shall lead from the street or road to every schoolhouse and to all outhouses, and suitable playgrounds shall be provided.

(b) *Buildings:* School buildings if of brick shall have a stone foundation, or the foundation may be of brick or concrete: *Provided,* A layer of slate, stone or other impervious material be interposed above the ground line, or the foundation may be of vitrified brick and the layer of impervious material will not be required. Every two-story schoolhouse shall have a dry, well-lighted basement under the entire building, said basement to have cement or concrete floor, and ceiling to be not less than ten feet above the floor level. The ground floor of all schoolhouses shall be raised a least three feet above the ground level and have, when possible, dry well-lighted basement under the entire building and shall have solid foundation of brick, tile, stone or concrete, and the area between the ground and the floor shall be thoroughly ventilated. Each pupil shall be provided with not less than 225 cubic feet of space, and the

interior walls and the ceiling shall be either painted or tinted some neutral color, as gray, slate, buff or green.

(c) *Lighting and Seating:* All schoolrooms where pupils are seated for study shall be lighted from one side only, and the glass area shall be not less than one-sixth of the floor area, and the windows shall extend from not less than four feet from the floor to at least one foot from the ceiling, all windows to be provided with roller or adjustable shades of neutral color, as blue, gray, slate, buff or green. Desks and desk seats shall preferably be adjustable, and at least twenty per cent. of all desks and desk seats in each room shall be adjustable and shall be so placed that the light shall fall over the left shoulders of the pupils. For left-handed pupils desks and seats may be placed so as to permit the light to fall over the right shoulder.

(d) *Blackboards and Cloakrooms:* Blackboards shall be preferably of slate, but of whatever material, the color shall be a dead black. Cloakrooms, well lighted, warmed and ventilated, or sanitary lockers, shall be provided for each study schoolroom.

(e) *Water Supply and Drinking Arrangements:* All schoolhouses shall be supplied with pure drinking water, and the water supply shall be from driven wells or other sources approved by the health authorities. Only smooth, stout glass or enameled metal drinking cups shall be used; water buckets and tin drinking cups shall be unlawful and are forbidden; and whenever it is practicable, flowing sanitary drinking fountains which do not require drinking cups shall be provided. All schoolhouse wells and pumps shall be supplied with troughs or drains to take away waste water, and under no conditions shall pools or sodden places or small or large mudholes be allowed to exist near a well. When water is not supplied at pumps or from water faucets or sanitary drinking fountains then covered tanks or coolers supplied with spring or self-closing faucets shall be provided.

(f) *Heating and Ventilation:* All schoolhouses hereafter constructed or remodeled, shall be supplied with heating and ventilating systems. Fresh air shall be taken from outside the building and properly diffused without draughts, through each schoolroom during the school session. Each schoolroom shall be supplied with foul air flues of ample size to withdraw the foul air therefrom at a minimum rate of eighteen hundred cubic feet per hour for each two hundred and twenty-five (225) cubic feet of said schoolroom space, regardless of outside atmospheric conditions; and heaters of

all kinds shall be capable of maintaining a temperature of 70 degrees Fahrenheit in all schoolrooms, halls, office rooms, laboratories and manual training rooms, in all kinds of weather, and maintaining in each schoolroom a relative humidity of not less than forty per cent: *Provided*, That when artificial ventilation, by use of fan or blower, is adopted, the provision as to entrance of fresh air shall be from outside of the building.

It is hereby made lawful for any township trustee, board of school trustees and boards of school commissioners to establish and maintain open air schools, and when such open air schools are established the provisions of this act governing heating and ventilation shall not apply to such open air school rooms.

(g) *Water-Closets and Outhouses*: Water-closets, or dry closets when provided, shall be efficient and sanitary in every particular and furnished with stalls for each hopper or place; and when said water or dry closets are not provided, then sanitary outhouses, well separated for the sexes, shall be provided. Good dry walks shall lead to all outhouses and screens or shields be built in front of them. Outhouses for males shall have urinals arranged with stalls and with conduits of galvanized iron, vitrified drain pipe, or other impervious material, draining into a sewer vault or other suitable place approved by the health authorities. Any agent, person, firm or corporation, selling, trading or giving to any township trustee, school trustee or board of school commissioners, any material, supplies, sanitary apparatus or systems, which when constructed or remodeled or installed, in or for any schoolhouse, hereafter constructed or remodeled, which does not in all respects comply with the provisions of this act, shall be guilty of a misdemeanor, and upon conviction thereof, shall be fined in any sum not more than five hundred (\$500.00) dollars, to which may be added imprisonment in the county jail for any determinate period not more than six (6) months and shall be punished by a further fine of not less than five (\$5.00) dollars for each day he shall fail to comply with any order of any court having jurisdiction for the correction of any such defects in such school houses hereafter constructed or remodeled; and any money claim for the construction or remodeling, or for any materials, supplies, sanitary apparatus or systems furnished or constructed in or for any schoolhouse hereafter constructed or remodeled, which does not in every way and in all respects comply with the requirements of this act, shall be null and void.

## TEMPERATURE—UNCLEANLINESS—TEACHERS—PENALTIES.

Sec. 2. Whenever, from any cause, the temperature of a school-room falls to 6 degrees Fahrenheit or below, without the immediate prospect of the proper temperature, namely, not less than 70 degrees Fahrenheit, being attained, the teacher shall dismiss the school until the fault is corrected; and it shall also be the duty of all teachers to immediately send home any pupil who is perceptibly ill in any way, or who is unclean and emits offensive bodily odors or who is infested with lice or other vermin; and the truant officer shall arrest and prosecute parents or guardians who do not rid their children of vermin and bodily uncleanness, when notified to do so. Refusal of parents or guardians to free their children or wards of vermin or to bathe and cleanse them, making them fit to go to school, shall be punished by a fine of not less than five dollars and imprisonment for ten days or both. And if the refusal or neglect of parents or guardians to bathe and cleanse their children or wards makes it necessary, then the truant officer, upon order of the school authorities, shall have it done, the cost to be paid by the school authorities from the school funds. Whenever diphtheria, scarlet fever or other contagious and infectious diseases break out in any school it shall be the duty of the township trustee, school board, school trustee or the school authority or authorities having control, to have medical inspection made of the pupils, and all found in any degree ill shall be sent home and there retained until the local health officer gives a certificate of health, then such child may be again admitted to school. It shall be unlawful for school authorities to employ teachers or janitors who are not able-bodied or who are addicted to drugs or intemperate, or who have tuberculosis or syphilis. All schoolhouses shall be specially cleaned and disinfected each year before they are used for school purposes. The cleaning shall consist in first sweeping, then scrubbing the floors, washing the windows and all woodwork, including the wooden parts of seats and desks, and the disinfecting shall be done in accordance with the rules of the State Board of Health. Township trustees, school boards and boards of school commissioners who neglect or refuse to obey the provisions of this section shall be fined in any sum of not less than ten nor more than one hundred dollars, and each said refusal or neglect shall constitute a separate offense.

## HYGIENE AND SANITARY SCIENCE—PRINTED DATA.

Sec. 3. There shall be taught in each year in the fifth grade of every public school in Indiana, the primary principles of hygiene

and sanitary science, and especially shall instruction be imparted concerning the principal modes by which each of the dangerous, communicable diseases are spread, and the best sanitary methods for the restriction and prevention of each such disease. Hygiene may also be taught in other grades at the will of school authorities. The State health commissioner and the State superintendent of public instruction shall jointly write, compile or originate printed data in leaflet form, setting forth as plainly as possible, the primary principles of hygiene and sanitary science, and information concerning the prevention of diseases, and supply the same to all county superintendents, and said superintendents shall supply all the schools in their respective counties and see to it that teachers do not fail to comply with this section: Provided, That for all cities and towns having school superintendents, the said leaflets and pamphlets shall be sent direct to such superintendents, who shall see to it that teachers comply with this section. The State printing board shall publish from its funds all health leaflets or pamphlets as are herein provided for, and shall also pay the cost of distribution of the same to the county, city or town superintendents, from the State printing funds.

#### SCHOOL OFFICERS—POWERS.

Sec. 4. For the purpose of enforcing this act and making it practical, township trustees, boards of school trustees and boards of school commissioners shall have the power, and it is herewith made lawful for said trustees and said boards to make a levy not to exceed five cents (5 cents) on each one hundred dollars (\$100.00), the sum thus raised to be added to the special school fund, but to be used only for building and furnishing of schoolhouses. This levy shall not be made unless plainly necessary.

#### PENALTY AS TO OFFICERS.

Sec. 5. Any township trustee or the member of any board of school trustees or any teacher or any person who violates any provision of this act, except as herewith or otherwise provided, shall upon conviction, be fined not less than \$50.00.

#### REPEAL.

Sec. 6. All laws in conflict with this act are repealed.

The following rules were adopted:

## RULES GOVERNING FREE PASTEUR PREVENTIVE TREATMENT FOR RABIES.

Passed by the Indiana State Board of Health, December 17, 1913.

Attest, J. N. Hurty, Secretary.

**RULE 1.** Persons taking *Free "Pasteur" preventive* treatment, upon signature hereto, shall personally assume all risks, such as accidents or complications occurring during or following treatment.

**RULE 2.** After the third day of treatment, all treatments will be given every day between 9:00 a. m. and 10:00 a. m. unless special arrangements are made. Treatment will be postponed till the following day for patients who come late.

**RULE 3.** New treatments will not be begun on Saturday or Sunday.

**RULE 4.** All patients over fourteen years of age, if called upon, must give their assistance in the public health work of the State Board of Health.

**RULE 5.** Parents or guardians with children must keep close and careful watch over them, and they shall be held responsible for the deportment and for any damage said children may do.

**RULE 6.** All patients, unless permission to do otherwise is given by the physician administering treatment, must be in their rooms at boarding house or hotel by 9:00 p. m.

**RULE 7.** Alcohol and tobacco shall not be used in any form during the treatment or for one month following completion of treatment, except upon special permission of the physician.

**RULE 8.** Children must not eat candy, bananas or other sweets during the treatment, nor shall any medicine be given to them except the same is prescribed by the attending physician.

**RULE 9.** Persons taking the *Free "Pasteur" preventive* treatment who wilfully violate these rules, shall immediately forfeit all rights to further free treatment.

### RULE NUMBER 10 AMENDED.

*Ordered:* Rule 10 of the rules of the Indiana State Board of Health duly passed as appear in the minutes of the Board, shall be amended to read as follows to wit:

**Rule 10. *Infectious Diseases***—The infectious and contagious diseases which shall be immediately reported to the health officer having jurisdiction and which shall be quarantined are hereby declared to be: Yellow fever, smallpox, cholera, diphtheria, membranous croup, scarlet fever, measles, epidemic poliomyelitis, cerebro-spinal fever, typhus fever, bubonic plague, leprosy, pulmonary

consumption, typhoid fever, chicken-pox, whooping-cough, trachoma, contagious ophthalmia (pink eye), syphilis and gonorrhoea.

*Provided*, pulmonary consumption, typhoid fever, syphilis and gonorrhoea shall not be quarantined as they are to be reported for record and statistical purposes only, and chicken-pox, whooping-cough, measles and trachoma shall be carded to warn the public, absolute quarantine not being required; and *Provided further*, When a case of trachoma, contagious ophthalmia (pink eye), is under approved treatment, as it would not then be transferable, said case shall not be carded, and shall not be excluded from school, and Rule 10 of the Indiana State Board of Health, governing health authorities, passed July 9, 1909, is herewith repealed.

**REGULAR QUARTERLY MEETING OF THE INDIANA  
STATE BOARD OF HEALTH FOR THE FIRST FIS-  
CAL AND THE FOURTH STATISTICAL QUAR-  
TER, BOTH ENDING DECEMBER 31, 1913.**

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Called to order by President Davis at 1:00 p. m.

Present: Drs. Davis, Boyers, Sutton, Hurty.

The President stated the meeting was regular and for the purpose of attending to the business for the first fiscal and the fourth statistical quarter, both ending December 31, 1913, and to attend also to such other business as might come before the Board.

The minutes of the last regular meeting, and special meeting held December 17 were read and approved in each separate part and as a whole with the following correction to wit: After the word trachoma in line 14 and 20 on page 183 of the minutes for the special meeting held December 17, 1913, insert the words: "Contagious ophthalmia (pink eye).

**REPORT OF SECRETARY FOR THE QUARTER ENDING  
DECEMBER 31, 1913.**

Nothing unusual has occurred in the work of the Board during the last quarter. The affairs of the office have gone on as usual, and, in accordance with the directions of the Board, special emphasis has been laid upon the collection and general handling of vital statistics. The exhibit work has gone on successfully, Mr. Owens, having conducted Health Week at the following places: Covington, Attica, Terre Haute, Spencer, Mitchell, Paoli, Salem, Columbus.

The reports of the newspapers as usual were favorable to the work and commended the efforts of the State Board in behalf of the health of the people. This educational work is certainly very important and is producing good results. It is found that the school children are more amenable to the teachings of the exhibit, the lecture, the still and moving pictures than the adults.

It is pleasant to be able to report that many of the new mayors elected in November are exhibiting special and unusual interest



and Mishawaka the same program was pursued. At all three places I was favorably and kindly received and resolutions were passed commending the work of the State Board of Health and resolving to participate in the same to the fullest extent possible.

*November 4, Culver.*—This visit was made to consult with the local authorities upon public health matters and also to deliver an address before the Civic Club. As usual the audience was a large one and the work of the State Board of Health was fully endorsed by resolution.

*November 6, Hartford City.*—This visit was made upon invitation of the Fifth Councilor District Medical Society to read a paper and make a public address upon public health. The paper entitled "Practical Eugenics" was read before a large audience in the Methodist Church, the audience being composed of citizens and members of the medical fraternity. I spoke to the high school and met with the Woman's Civic Club of Hartford City and discussed with them plans for public health betterment.

*November 11, Elwood.*—This visit was made on account of an invitation from the Woman's Club. In the afternoon I consulted with the club, talked upon public health matters, and presented a scheme of organization for public health work. I also talked by invitation upon sex hygiene. In the evening at the Rink, which held one thousand people, and was crowded, I gave an illustrated lecture upon the prevention and cure of tuberculosis.

*November 13, Fort Wayne.*—Being invited by the Indiana Mothers' Congress to deliver an address, I visited Ft. Wayne upon this date. The Indiana Mothers' Congress was composed of women, all mothers, from all over the State of Indiana. The membership is over four hundred, and about two hundred were in attendance at the congress. My address was entitled "Better Babies" and was delivered in the Presbyterian Church auditorium, where a large audience was present.

*November 15, Gary.*—The State Association of Charities and Corrections held its meeting at Gary November 15 to 20. Because of a special invitation to deliver an address upon "Rural Hygiene," I attended. The principal features of this address are already a matter of formal report in the transactions of the Board.

*November 27, Peru.*—Upon invitation of the Young Men's Christian Association I went to Peru on this date to make an address. The address was illustrated by lantern and a large audience was present.

*November 26, Richmond.*—This visit was made in accordance with an invitation from the church brotherhood of the M. E. Church. It was an inclement evening and only a small audience was present. Resolutions were passed commending the State Board of Health for its good work.

*December 2, Fort Wayne.*—On this date I visited Fort Wayne because of an invitation from the city sanitarian to meet with the city authorities and to deliver a public address upon hygiene and its importance to the people. The address was delivered in the auditorium of the court house to a large audience, four editors being present. I believe a good impression was made and that good results must follow this visit.

*December 9, Salem.*—On account of public health work in Salem, the exhibit of the State Board of Health being present, I visited that place to take part in the work. In the afternoon I spoke to the Woman's society upon sex hygiene in the home, also made an address to the high school students, and in the evening gave an illustrated lecture in the local opera house upon the prevention and cure of tuberculosis. Large audiences were present and seem to appreciate the efforts on behalf of the State Board of Health to promote the good of the community.

*December 16, Columbus.*—On account of Health Week at Columbus, our exhibit being there, I visited the place in order to help on the work. Two talks were given in the afternoon to special audiences, and in the evening the usual illustrated lecture upon the prevention and cure of tuberculosis was presented. Good sized audiences were present in the afternoon and a very large audience in the evening. The local papers commended the efforts of the State Board to give instructions upon subjects relating to health preservation and advancement.

The same was accepted and ordered spread of record.

#### MUSCATATUCK CREEK.

A report of Muscatatuck Creek was read and ordered spread of record. See page 183, Report of Chemical Department.

## DR. SCHWEITZER'S REPORT.

JANUARY 6, 1914.

*Indiana State Board of Health:*

Gentlemen—As delegate to the International Exhibit of Safety and Sanitation, under the auspices of the American Museum of Safety, New York, December 11, 20, 1913, I beg to submit the following report:

The American Museum of Safety was organized and is maintained for (1) the prevention of accidents, (2) elimination or lessening of occupational diseases, and (3) the promotion of industrial welfare. This report deals mainly with work illustrating (2) and (3):

A conference was held in New York December 10th, 11th and 12th, where the following subjects were considered: Safer shops; human values; problems of transportation; care of injured; sanitary welfare of workers; physical examination of employes; the feeding of the workers; occupational diseases; factory lighting; ventilation; dental hygiene, etc.

Lectures were given throughout the week on these subjects and others at the Exhibit Hall in the Grand Central Palace. Many lectures were illustrated by moving picture films. Films were shown illustrating United States Public Health activities in Washington, San Francisco, New Jersey, and at Stapleton and Ellis Island, N. Y., showing destruction of disease carriers, methods of vaccination, and the examination of immigrants for physical and mental defects.

The National Association of Manufacturers showed films illustrating accident and fire prevention and industrial education. The National Cash Register Company, by request, showed what was being done for the health of its employes.

Other films and slides were exhibited through courtesy of private owners showing preventable blindness due to wood alcohol, to infectious diseases, as trachoma, gonorrhea, etc., and to Fourth of July accidents. Methods of garbage collection and garbage incinerators, the proper care of babies, etc., were other films shown.

The exhibits from different countries were commercial and industrial and educational, philanthropic and hygienic. Methods of preventing lead poisoning, the protection of workmen from dangerous dusts and industrial poisons were shown as were also specimens of dust and wax models showing effects of repeated inhalations.

Many exhibits were devoted to means of prevention of the spread of communicable diseases; there were types of sanitary

fountains and other supplies, water filtration, antiseptics, sweat-shop conditions, tests for purity, food analyses, and proper first aid. Effects of excessive alcoholism on individual and offspring were amply illustrated by charts and lectures.

Statistics prepared by the United States Army showed that the highest per cent. of admissions to hospitals was due to venereal diseases. More recruits are rejected because of venereal disease than from any other one cause, though alcoholism and diseases of the eye, ear, and heart are important.

Deaths from malaria have been reduced from 1.72 per 1,000 in 1898 to .08 in 1911. In 1910 the reported cases of syphilis were 24.7 per 1,000. In 1911 aided by Wassermann tests, the reported cases numbered 40.1 per 1,000. To these salvarsan was administered, shortening period of infectivity. Following the use of sanitary prophylaxis the rate of cases of gonorrhea has been lowered from a maximum of 117.9 in 1908 to 90.5 in 1911.

Typhoid vaccine prophylaxis lowered the admissions for typhoid in 1911 to less than one-third of those for 1909. In 1912 of 10,000 to whom typhoid vaccine was administered one died. Of 10,000 non-vaccinated persons 793 died.

The United States Public Health Service had models showing rat infested house, quarantine stations, sanatoria, preparation of vaccines and sera, the stages of trachoma, etc. The department of chemistry demonstrated relative food values.

The rapid growth of the hygienic movement as a business proposition is noticeable. The large business corporations, as the United States steel industry, the railroads, the insurance companies, and the manufacturing concerns, make every provision for the health of employes and patrons. The National Cash Register Company, for example, says that six cents a day for each employe provides safeguards, sanitary surroundings, comfort and recreation. More than six cents a day is returned to the company by each employe in increased efficiency.

Many statistical tables, sanitary devices and effective means of presenting truths were noted. Thousands of persons visited the exhibit daily.

*Ordered:* Jay Craven is herewith appointed a delegate to represent the Indiana State Board of Health at the sixth annual meeting of the Illinois Water Supply Association which will be held at the University of Illinois, Urbana-Champaign, Illinois, March 9 to 11, 1914, his expenses to be paid out of the special appropriation for the Water Laboratory.

*Ordered:* Mr. H. E. Barnard is herewith appointed a delegate from and to represent the Indiana State Board of Health at the National Cannery Association at Baltimore February 2 to 6, 1914, his expenses to be paid out of the Laboratory Fund.

*Ordered:* The Secretary shall have prepared a public health, a pure food, a weights and measures, a water and sewage exhibit, the same to be shown at the Indiana State Fair in the autumn of 1914.

#### KNIGHTSTOWN SCHOOLHOUSE.

In accordance with a petition from citizens of Knightstown, a sanitary survey of the schoolhouse at that city was made by Inspector F. Ebert. Said survey was duly considered, and it was officially

*Ordered:* The school board of trustees of Knightstown are herewith directed to open the ventilating ducts leading from each schoolroom in the schoolhouse at Knightstown and place therein hot pipes or registers of sufficient size to lift the air column and make them efficient as ventilating ducts. They are also directed to supply each window in each room with a baffle board at the bottom and neatly fitting each window case so that the windows may be raised and the air deflected upward for the purposes of ventilation. They are also directed to require that teachers shall thoroughly air out all the rooms at every recess, and they shall, also, if children at any time become sleepy and tired, stop all recitations, study and teaching, raise the windows or have them raised, and give the children gymnastic exercises for a period of at least two minutes. These extra precautions in regard to ventilation are directed for the betterment of the health of the pupils and the general sanitation of the school building.

The following schoolhouses were condemned:

- Clay County—District No. 1, Cass Township (Poland School).
- Carroll County—Flora School. District No. 5, Carrollton Township (Wheeling School). District No. 5, Democrat Township.
- Davless County—District No. 21, Barr Township (Cannelburg School).
- Decatur County—District No. 12, Marion Township.
- Fayette County—Jackson Township (Everton School).
- Hamilton County—District No. 2, Jackson Township.
- Hancock County—District No. 13, Center Township. District No. 9, Brown Township (Willowbranch School). District No. 5, Buck Creek Township (Mt. Comfort).
- Harrison County—Webster Township (New Middletown Schools). District No. 5, Jackson Township.

Howard County—District No. 10, Liberty Township (Lindley School).  
District No. 9, Liberty Township (Richville School).

Jackson County—District No. 6, Driftwood Township (Vallonia School). Salt Creek Township (Houston School).

Jay County—District No. 5, Jackson Township.

Lagrange County—District No. 8, Clearspring and Eden Townships (Topeka). Milford Township (South Milford School).

Laporte County—District No. 1, Coolspring Township (Waterford School). District No. 7, Cass Township (Wanatah High School).

Lawrence County—District No. 12, Indian Creek Township (Williams School).

Marion County—District No. 5, Warren Township. District No. 10, Wayne Township (Ben Davis School). District No. 3, Franklin Township (Independence School). District No. 11, Franklin Township (Five Points School). District No. 5, Franklin Township (Precinct School). District No. 4, Franklin Township (Kansas School).

Marshall County—District No. 1, Union Township (Hibbard School).

Martin County—District No. 2, McCameron Township (Culpepper School).

Orange County—District No. 9, South East Township (Hill School).

Owen County—District No. 5, Montgomery Township (Alverson School).

Pike County—District No. 7, Patoka Township (Harrison School).

Miami County—District No. 7, Pipe Creek Township.

Wabash County—District No. 10, Chester Township (Servia School).  
Lagro Township (Lincolnvill School).

Martin County—District No. 6, Lost River Township (Powell School).

Spencer County—Grass Township (Chrisney School).

WHEREAS, The said schoolhouses as duly entered herewith and for which each individual and separate schoolhouse a sanitary survey has been made and filed in the office of the State Board of Health; and

WHEREAS, Each individual and separate schoolhouse as above named has been judged to be insanitary and unfit for school purposes, the same are herewith condemned and the authorities in charge of said schoolhouses are forbidden according to law to use, or occupy or permit to be used said schoolhouses for school purposes after June 15, 1914.

*Ordered:* The Secretary shall represent the State Board of Health at the annual meeting of the International Association of Y. M. C. A. at Chicago, January 28th, to present the work of the Indiana State Board of Health and to lecture upon administrative hygiene, his expenses to be paid out of the general appropriation for the Board.

*Ordered:* The Secretary shall represent the State Board of Health at the annual meeting of the Committee on Medical Education and Legislation of the American Medical Association, to be held in Chicago, February 22d and 23d, his expenses to be paid out of the general fund of the Board.

**REGULAR QUARTERLY MEETING OF THE INDIANA  
STATE BOARD OF HEALTH FOR THE FIRST CAL-  
ENDAR QUARTER AND THE SECOND FISCAL  
QUARTER, BOTH ENDING MARCH 31, 1914.**

APRIL 10, 1914.

Called to order by President Davis at 1:00 p. m.

Present: Davis, Boyers, Sutton, Hurty.

The minutes of the last meeting held January 16, 1914, were read and approved in each separate part and as a whole.

**REPORT OF THE SECRETARY FOR THE QUARTER  
ENDING MARCH 31, 1914.**

The terms of all county, city and town health officers having expired January 1, 1914, the appointing authorities under the law appointed successors to the old officers. Two hundred and three new officers were appointed. Of the 92 county health commissioners, 50 were newly appointed. Of the 97 city health officers 59 were newly appointed. Of the 383 town health officers 94 were newly appointed. The new officers come into the work usually without knowledge of the law and the rules and without having studied sanitary science and preventive medicine. Accordingly, the first three months of their service is one of confusion, and very little real disease prevention and sanitary work is done. In consequence, epidemics usually appear in the quarter of the year of the change of officers, which under the old officers would probably not have appeared.

The need of having in each county an all-time county health commissioner, properly paid, with proper powers, and with a laboratory, appears plainer and plainer each year.

During the quarter epidemics have prevailed in various parts of the State, smallpox, scarlet fever and measles. No marked epidemics of diphtheria have been reported. Fortunately, the smallpox, scarlet fever and measles epidemics have presented mostly mild cases. There has not been a single smallpox death and only

a very few scarlet fever and measles deaths. The statistics for the month are not yet completed but the actual figures will appear in the tables always given in this report. Our statistics for 1913 show plainly that the diphtheria deaths have decreased, but the cases of diphtheria have not decreased. This seems to warrant the conclusion that precautions against the disease have not been taken, while the use of antitoxin has reduced mortality. If investigation should show that the discovery of the antitoxin cure for diphtheria has in any way interfered with precautions against the prevention of disease, then it is not an unmixed blessing.

The Secretary regretfully reports that the U. S. Census Bureau has ceased to have transcripts made of the death certificates of Indiana. It seems the Treasury Department has concluded not to bear the expense, and, therefore, all of the States furnishing these transcripts are no longer doing so. It was, of course, an honor for Indiana to be included in the list of registration States.

It is also with regret that the Secretary reports the necessity of abandoning, since January 1st, the traveling exhibit which, under the management of Mr. Owens, has been doing a good work. Mr. Owens resigned his position as educational secretary to take a like position in Illinois at a much larger salary. So far, the Secretary has failed to find a man to take Mr. Owens' place, and in consequence the traveling exhibit and field educational work in preventive medicine has temporarily ceased.

Better registration of births has certainly been accomplished in the last quarter. The county health commissioner in every county has been prodded in this matter, and articles have been published in numerous papers, calling the attention of the public to the importance of birth registration.

The circulation of the Indiana Mothers' Baby Book began in February and is being sent out every day to those who request it, and county by county the State is being covered. A number of very complimentary letters upon this "baby book idea" have been received from prominent sanitarians and public health officers. Several medical magazines have complimented and approved the Baby Book which, of course, is very gratifying.

The smallpox and typhoid fever tables for the quarter are herewith given:



## SMALLPOX.

	<i>No. of Cases.</i>	<i>No. of Deaths.</i>	<i>Counties Invaded.</i>
January, 1913 .....	350	0	24
January, 1914 .....	234	1	26
February, 1913 .....	499	0	30
February, 1914 .....	458	0	38
March, 1913 .....	463	1	34
March, 1914 .....	680	0	40
<hr/>			
Total, 1913 .....	1,312	1	88
Total, 1914 .....	1,372	1	104

## TYPHOID FEVER.

	<i>No. of Cases.</i>	<i>No. of Deaths.</i>	<i>Counties Invaded.</i>
January, 1913 .....	74	26	34
January, 1914 .....	142	37	40
February, 1913 .....	81	25	33
February, 1914 .....	127	38	32
March, 1913 .....	53	27	19
March, 1914 .....	132	..	37
<hr/>			
Total, 1913 .....	208	78	86
Total, 1914 .....	401	78	109

The Secretary reports the following visits, all of them made on account of requests from local authorities and in accordance with the law, which commands that the State Board of Health shall strive to be serviceable to the people and to disseminate disease prevention information.

*January 15, Greenfield.*—This visit was made upon invitation of the school authorities and the county health commissioner for consultation in regard to public health conditions. Plans for the betterment of the sanitary conditions of the school buildings of Greenfield were inspected, certain minor changes were recommended and the same were finally adopted by the school authorities. This change related to sewage disposal and ventilation. An audience was given the Secretary and the county health commissioner by the county commissioners and the auditor. The subject was "Disease Prevention", and it was the effort of the officers to impress upon the commissioners the very great business importance of the economy of preventing disease. At the end of the conference the commissioners said voluntarily they would hereafter interest themselves in this important matter. A talk was given to the high school students upon the work of the State Board of Health, as is always done when the Secretary visits any city or town.

*January 20, Carmel.*—Upon invitation of the town authorities and the superintendent of schools at Carmel I visited Carmel, taking with me six senior students of the Medical Department of the State University. The object was to make medical inspection of the school children. The day was spent in this work and a talk upon public health was given to the higher grades. Inspection discovered the usual conditions. Fully 90 per cent. of the children had bad teeth, coated tongues and disturbed stomachs were frequent. Two cases of enlarged glands far advanced were discovered, ten cases of adenoids and thirteen cases of extra enlarged tonsils. The exact number of anemic and badly nourished children was not taken but it was noted they were numerous.

*February 1, Terre Haute.*—The object of this visit was to confer with the new city authorities in regard to what could be done to raise the health of the city. I met with the mayor and other officials, the city health officer and two members of the committee on public health of the city council. Among other sanitary improvements suggested, it was recommended that a public health day be held. Mayor Roberts accordingly appointed April 1st as the day, and all the gentlemen present were certainly greatly interested and promised to further the objects of the public health day all they possibly could.

*February 3, Muncie.*—In response to an invitation from the president of the Muncie Normal School made this visit in order to speak to the student body upon the work of the State Board of Health and the importance of public sanitation. A large audience was present and seemed to appreciate the information and the lessons given, for hearty thanks were voted and special thanks were offered by teachers and others.

*February 10, Huntington.*—This visit was made in answer to an invitation of the Froebel Club to make a public address under its auspices upon the subject of "Disease Prevention." Mr. I. B. Potts, a business man and secretary of the club, extended the invitation. My arrival was timed so that a talk could be given to the high school pupils and the grammar grade pupils in the afternoon. It was my usual talk, entitled "The Work of the State Board of Health and the Prevention of Disease." In the evening a large audience filled the auditorium of the high school building. I was introduced by the president of the club after a program of music and a recitation. The address was kindly received and a vote of thanks accorded.

*February 19, East Chicago.*—An invitation from the local medical society and from the mayor and city council of East Chicago was the reason for my visit. The local medical society had advocated medical inspection of school children and the meeting before which I was to speak was called "A Follow-up Meeting." A good audience assembled in the council chamber, the mayor and all but two councilmen being present, also the teachers of the schools and many citizens. The entire ground concerning medical inspection was considered, the law and the rules of the State Board of Health were presented, and it was the expressed opinion of the meeting by resolution that East Chicago should as soon as possible institute medical inspection of the school children. I believe this visit will be more than ordinarily fruitful of good results.

*February 20, Lewisville.*—The old schoolhouse at Lewisville was condemned in 1911 and the new building being finished, it was dedicated on this date, February 20, 1914. The State Board of Health was invited to be represented and it was in this capacity that the visit was made. Lewisville is to be congratulated upon its new schoolhouse, which is a beautiful building, sanitary in every respect and ample in size. The auditorium was crowded to suffocation and much beyond the capacity of the ventilating system, which system upon ordinary occasions was adequate in every respect. Program for the dedication included music and recitations, and speeches by citizens, followed by the final address given by myself.

*February 22, Bremen and Garrett.*—The Bremen visit was made for the purpose of addressing the local civics club upon the subject of "What Hygiene Can Do for Humanity." The high schoolroom was crowded and the lecture, seemingly, was well received. I was compelled to stay all night and the next morning I held conference with the town authorities and made recommendations in regard to the improvements of sanitary conditions at the schoolhouse, and also inspected the water supply of the town, which is adequate and of good quality. Although not within my jurisdiction, still it is appropriate to say that the business conduct of the water works is far from what it should be. A new superintendent had been appointed but could not tell the daily pumpage and did not know the daily cost of maintenance.

*Garrett.*—From Bremen I visited Garrett because of an invitation of the mayor, Doctor Clevenger, to inspect the city, to meet the city authorities and citizens and to make such recommendations as seemed proper, and also to address a public meeting. I arrived

from Bremen at 10:00 a. m. and was met at the station by the mayor in his automobile. With him and the city health officer, and two members of the council, different parts of the city were visited and observations taken. Subsequently, all alone, I made inspections of several alleys and the public school building. In the afternoon I spoke to the high school and grammar grade pupils, and later I was honored with a public reception at the house of the mayor, which reception was largely attended by citizens of both sexes. However, most of the callers were women. In the evening my lecture was given in the city hall to a large audience. The sanitary conditions of the city of Garrett was freely criticised, and I am pleased to say the criticisms met with approval, as was evidenced by the applause given.

*March 3, Bloomington and French Lick.*—The Bloomington visit was made for the purpose of delivering a lecture upon the "Importance and Methods of Collection of Vital Statistics," to the student body. The lecture was purely didactic and is given every year to a new class.

*French Lick.*—From Bloomington I went to French Lick to attend the annual meeting of the National Association of Insurance and Medical Examiners. My invitation to attend this meeting was from the program committee, the request being for a paper upon the subject of "How Insurance Companies, and Especially the Medical Examiners of Insurance Companies, May Help Advance the Public Health Cause." My paper was well received, and thoroughly discussed, and a vote of thanks passed.

*March 13, Coatesville.*—The object of this visit was to deliver a public lecture in the evening upon "Tuberculosis and Its Prevention." The lecture was illustrated. An audience entirely filling the M. E. church was present. I presume the lecture was well received, although no resolution of thanks was passed.

*March 17, Lafayette.*—Upon invitation of the health officer of West Lafayette, Dr. W. R. Moffitt, and Professor Hilliard, professor of hygiene in Purdue University, I went to Lafayette on this day. Upon arrival I consulted with Doctor Moffitt in regard to the sewage problem, also in regard to some quarantine difficulties, all of which I think will finally be satisfactorily settled. Following this an address was delivered to the student body upon the subject of "The State Board of Health and Its Work."

*March 23, Rochester and Auburn.*—I went to Rochester because of a subpoena from the Fulton County Court on account of a suit

involving sanitary conditions at Bruce Lake in Pulaski County, the case having been appealed to Fulton County. Upon my arrival I immediately went to the court and found the case had been postponed. Knowing I was to be in Rochester on this day for court purposes I had previously arranged for two addresses upon the public health. The first was given to the high school pupils and the second to a public audience in the court room under the auspices of the Ladies' Civic Organization.

*Auburn.*—From Rochester I went to Auburn, arriving there March 24th. This was on account of an invitation from the Hon. J. Y. W. McClellan, mayor of the city. He wanted the advice of the State Board of Health in regard to bettering the public health of Auburn. A consultation was held with him and the city council, city engineer and city attorney. The subjects of cleaning up the city, of a proper garbage ordinance, of a plumbing ordinance and of a milk ordinance were considered. With the city attorney all of these ordinances were blocked out and the city expects to go onward in public health work. In the evening, as prearranged, I addressed a public audience in the city hall upon the subject of "The State Board of Health and Its Work."

*March 27, Anderson.*—Being invited as a special guest of the Anderson Merchants' Society I went to Anderson on this day. A dinner was served to 150 business men in the large dining-room of the Grand Hotel. When the dinner was over I was called upon to make such suggestions to the business men as I thought proper concerning the betterment of public health in Anderson. After presenting the general principles of hygiene and of the benefits to be derived from the practical application of the laws of hygiene and every day life, I proposed to the merchants that "Health Day" in Anderson be held under the auspices of the business men. Accordingly, April 30th was appointed as the date, and a program has been arranged. All the merchants that can possibly do so, will trim and dress their store windows with those things which pertain, either directly or remotely, to the public health. Druggists will show in their windows disinfectants, soaps and other articles they handle which pertain directly to health. Hardware merchants will show in their windows galvanized cans, hoes, rakes and all other articles they handle which pertain to cleanliness and health. Other merchants will dress their windows accordingly, and in all windows will be displayed the slogan of the day "Public Health is Public Wealth."

A mass meeting will be held in the afternoon in the opera house by the Hon. Joseph E. Bell, mayor of Indianapolis, and other speakers. The entire meeting will be given over to public health questions. In the evening in the same place another mass meeting will be held, which will be addressed by Dr. Guy Kiefer of Detroit and other speakers. At this meeting moving pictures will be shown, illustrative of different phases of public health. A feature of Health Day in Anderson will be a public health parade.

*March 31, Connersville and Carthage.*—The object of the trip to Connersville was to make a sanitary survey of the poorhouse of Fayette County. This was upon invitation of the county authorities and at the request of the State Board of Charities. The survey was made and is presented separately herewith. Occasion was taken to speak to the high school pupils upon the subject of "Health and Its Work."

*Carthage.*—From Connersville I went to Carthage, where, in the evening in the public library, I delivered an illustrated lecture to an audience which packed the room. The subject was "The Prevention of Disease." The lecture was well received and resolutions of thanks were passed.

*Ordered:* The Secretary's report be received and spread of record.

#### ANTI-FLY CAMPAIGN IN LAWRENCE COUNTY.

The Secretary announced that Surgeon-General Blue of the U. S. Public Health Service had consented to send Surgeon L. L. Lumsden with at least three and possibly five aids to conduct an anti-fly campaign in Lawrence County. Lawrence County was selected because it had the second highest typhoid death rate of the counties of the State, Pike county being first. Lawrence County was selected instead of Pike because it was more easily accessible. Dr. Lumsden and aids are to arrive about May 1st. A laboratory will be established at Bedford and a thorough survey of the county made. Every home where typhoid has appeared in the last two years will receive a special visit. The object of the campaign is to call the attention of the people to the fact that they need not have typhoid fever and that it will disappear if the conditions producing it are removed. The primary thought of the work is that of helpfulness.

The Secretary further announced that the coming of the U. S. Public Health Service authorities was at the invitation of the State

Health Commissioner, he feeling confident he would be supported by the State Board of Health.

Upon consideration of the above statement, the following resolution was adopted:

*Resolved;* The State Board is glad to learn that an educational and preventive campaign against typhoid fever will be conducted by the U. S. Public Health Service under the auspices and upon the invitation of the State Board of Health.

#### CHRISNEY SCHOOL MATTER.

Dr. Bean, representing the Chrisney School Board, appeared before the State Board of Health and submitted various letters and statements in reference to the condition of the building, and the financial condition of the school board, and requested the condemnation be removed.

After consideration it was

*Ordered:* That condemnation should remain in full force and effect and that the Chrisney School Board should take some definite steps to comply with the condemnation.

Mr. Barnard appeared before the Board and gave a verbal report concerning the Fraud circular about patent medicines which had been printed by order of the Board, and which had been distributed. He stated the requests for the circular were very numerous and he thought warranted a new edition. After consideration, the Board ordered that a new edition of 5,000 should be printed.

#### STRAW BOARD.

A letter was read from Engineer Phelps of the U. S. Public Health Service in regard to the disposal of straw board refuse. He proposed that a study be made of this refuse and its disposal in Indiana, the same to be conducted under the auspices of the State Board of Health and with the aid of the Water and Sewage Laboratory. After consideration of this proposal, the following resolution was passed:

*Resolved;* The State Board of Health extends a hearty invitation to the U. S. Public Health Service to send its engineers to Indiana to investigate and study straw board refuse and its sanitary disposal, also to investigate and study the extent of stream pollution from this cause. The laboratories of the State Board of

Health to be at the command of said engineers and the Board to give all the aid it possible can to said investigation and survey.

#### SANITARY SURVEY OF TROLLEY CARS.

After consideration, it was

*Ordered;* The Secretary shall have a sanitary survey of the trolley cars of Indiana made, said survey to consist of a study of the insanitary conditions in connection with trolley cars. The survey shall include a thorough inspection of water supply and the cleanliness and the ventilation of the cars. The said survey to be made as soon as possible, and a report presented in due time.

#### SANITARY SURVEY OF VINCENNES AND TERRE HAUTE.

After consideration it was

*Ordered;* The Secretary shall have a sanitary survey of Vincennes and Terre Haute duly made, the same to consist of a special and full inspection of the public water supply and the wells of the said cities, the survey also to consider the general sanitary conditions as to drainage, sewers, disposal of garbage, and general cleanliness.

#### SCHOOLHOUSES CONDEMNED.

After study and consideration of the surveys presented, the following schoolhouses were condemned:

District No. 1, Perry Township, Boone County.  
 District No. 3, Jackson Township, Boone County.  
 District No. 12, Jackson Township, Boone County.  
 District No. 4, Jackson Township, Boone County.  
 District No. 2, Perry Township, Boone County.  
 District No. 9, Warren Township, Marion County.  
 Willis School, Washington Township, Pike County.  
 District No. 7, Railroad Township, Starke County.  
 Dugger High School, Cass Township, Sullivan County.  
 District No. 11, Madison Township, Jefferson County.  
 North Manchester High School, Wabash County.  
 Mansfield School, District No. 3, Jackson Township, Parke County.  
 Hopewell School, District No. 7, Dudley Township, Henry County.  
 Benton School, District No. 1, Benton Township, Elkhart County.  
 Districts Nos. 5, 2, 4, 3, German Township, St. Joseph County.

*Ordered:* Drs. Sutton, Boyers and Hurty shall be delegates to attend the annual meeting of State Boards of Health with the U. S. Public Health Service at Washington, June 18th; and they



shall also be delegates from the State Board of Health to attend the annual meeting of the Conference of State and Provincial Boards of Health at Washington, June 19th and 20th. And further, they shall also be the delegates of the Board to attend the annual meeting of the American Medical Association to be held at Atlantic City beginning June 22d to 27th, their expenses to be paid out of the general appropriation of the Board.

*Ordered:* Dr. Will Shimer shall be a delegate from the State Board of Health to represent the Laboratory of Hygiene at the annual meeting of the American Medical Association at Atlantic City, June 22d to 27th, his expenses to be paid out of the appropriation for the Laboratory of Hygiene.

#### DR. SCHWEITZER'S REPORT.

The following report of Dr. Ada E. Schweitzer was read and ordered spread of record:

##### *To Indiana State Board of Health:*

Abstract of Report on Improvement in Housing Conditions of High School Pupils at Vevay. Submitted by Ralph N. Tirey, Superintendent of Schools, Subsequent to Investigation and Report of April 26, 1913.

BY ADA E. SCHWEITZER, M.D.

Patrons found conservative in approving any plan involving radical change.

Program Committee of Parent-Teachers' Association keeps subject before mothers.

At rooming houses there is only one instance of cooking and sleeping in a single room. All others have at least two rooms. Several board at good boarding houses; others take hot lunches there.

The general health and social conditions have been greatly improved by following changes in school plant and course of study:

1. Installation of sanitary water closets and lavatories (hot and cold water) for both sexes. Installation of paper towels, liquid soap and bubbling drinking fountains.
2. Overhauling the heating and ventilating system in the high school building.
3. Lighting area increased, all walls painted flat neutral tint and new floors laid.

4. A new gymnasium erected (75 ft. x 45 ft.). Period for plays and games arranged under supervision for both sexes.

5. Practical application in students' homes of instruction in domestic science classes of freshmen and sophomore girls.

6. Means for proper recreation and study during the period after school (including evening) each day had been secured as follows:

A. A reading room 55 ft. x 23 ft. in high school building has been provided with electric lights, and an adequate heating and ventilating system. Four hundred dollars worth of library furniture and many volumes of good books have been donated. The room is kept open each evening from 7:00 until 8:30. All pupils who elect to come are required to be present a full period. There is an average attendance of 40 each evening. Thus we furnish proper conditions for study for many who would not otherwise have such conditions and the boys and girls are kept away from such distracting social influences as pool rooms and dance halls.

B. The gymnasium is open to groups of pupils each afternoon, and many evenings for games, social functions, etc., always under the direction of one or more teachers.

A scheme has been devised for monthly reports from landladies. This year reports have been made orally but it is hoped that next year complete written reports may be had which will be open to inspection of both parents and teachers. The outline follows:

LANDLADY'S MONTHLY REPORT OF \_\_\_\_\_, FOR \_\_\_\_\_ (THE MONTH OF SCHOOL), 191...-191...

1. The number of evenings pupil left rooms.
2. The number of evenings pupil stated he was present at library.
3. Does pupil attend any places or events not conducive to good health, good morals or good school work? If so where and how often?
4. Is there any tendency upon the part of the pupil to form the street loafing habit?
5. According to your best judgment how much time each evening does above pupil spend in study?
6. Does the pupil arrive home later than 8:45 p. m. when returning from the library? Library closes at 8:30 p. m.
7. If the pupil is a girl state whether she has company (boys) during the school week? How often?
8. Do you know of anything that is hindering the pupils' school work?
9. Does the pupil make an effort to keep the room orderly and tidy?
10. Does the pupil observe proper sanitary principles and regulations in taking care of sleeping room and study room?
11. What is the usual retiring time of pupil?

12. As far as you know is the pupil in any way failing to be obedient to his parents?

13. Do you know of any condition that is injurious to the pupils' health? What?

I certify that the above is true and accurate to the best of my knowledge and belief.

(Signed) ....., Landlady.

## RULES GOVERNING TRANSPORTATION OF THE DEAD.

After consideration, the rules governing transportation of the dead, passed February 8, 1899, were repealed in toto and the following rules and form of transportation permit were adopted:

### REGULATIONS REGARDING THE TRANSPORTATION OF THE DEAD.

*Adopted by the Conference of the State and Provincial Boards of Health, June 13, 1913.*

**RULE 1.** A transit permit and transit label issued by the proper health authorities shall be required for each dead body transported by common carrier.

The transit permit shall state the name, sex, color and age of the deceased, the cause and date of death, the initial and terminal points, the date and route of shipment, a statement as to the method of preparation of the body, the date of issuance, the signature of the undertaker, the signature and the official title of the officer issuing the permit.

The transit label shall state the place and date of death, the name of the deceased, the name of the escort or consignee, the initial and terminal points, the date of issuance, the signature and official title of the officer issuing the permit shall be attached to the outside case.

**RULE 2.** The transportation of bodies dead of small-pox, plague, Asiatic cholera, typhus fever, diphtheria (membranous croup, diphtheritic sore throat), scarlet fever (scarlet rash, scarlatina), shall be permitted only under the following conditions:

The body shall be thoroughly embalmed with an approved disinfectant fluid, all orifices shall be closed with absorbent cotton, the body shall be washed with the disinfectant fluid, enveloped in a sheet saturated with the same, and placed at once in the coffin or casket which shall be immediately closed, and the coffin or casket, or the outside case containing the same shall be metal or metal lined, and hermetically and permanently sealed.

**RULE 3.** The transportation of bodies dead of any diseases other than those mentioned in Rule 2 shall be permitted under the following conditions:

(a) When the destination can be reached within twenty-four hours after death, the coffin or casket shall be encased in a strong outer box made of good sound lumber not less than seven-eighths of an inch thick, all joints to be tongued and grooved, top and bottom, put on with cleats or cross pieces, all put securely together.

(b) When the destination cannot be reached within twenty-four hours after death, the body shall be thoroughly embalmed and the coffin or casket placed in an outside case constructed as provided in paragraph (a).

**RULE 4.** No disinterred body dead from any disease or cause shall be transported by common carrier unless approved by the health authorities having jurisdiction at the place of disinterment, and transit permit and transit label shall be required as provided in Rule 1.

The disinterment and transportation of bodies dead of diseases mentioned in Rule 2 shall not be allowed except by special permission of the health authorities at both places of disinterment and the point of destination.

All disinterred remains shall be enclosed in metal or metal-lined boxes and hermetically sealed, providing that bodies in a receiving vault when prepared by a licensed embalmer shall not be regarded as disinterred bodies until after the expiration of thirty days.

**RULE 5.** The outside case may be omitted in all instances when the coffin or casket is transported in hearse or undertaker's wagon.

**RULE 6.** Every outside case shall bear at least four handles, and when over 5 feet 6 inches in length, shall bear six handles.

**RULE 7.** An approved disinfectant fluid shall contain not less than 5 per cent. of formaldehyde gas, the term "embalming" as employed in these rules shall require the injection by licensed embalmers of not less than 10 per cent. of the body-weight, injected arterially in addition to cavity injection, and twelve hours shall elapse between the time of embalming and the shipment of the body.

**RULE 8.** Where corpses are shipped into Indiana from other States, burial permits may be issued by officer or deputy at place where they are received. Said permit shall be based upon the data of Transit Permit. A record of such permit is to be kept by local health officer, but no report made to State Board.

(Always write with black ink)

## TRANSPORTATION OF CORPSE.

STATE BOARD OF HEALTH BUREAU OF VITAL STATISTICS Certificate of Death.			
1 PLACE OF DEATH State of Indiana, County of..... City of.....		No. ....	St. .... Ward ..... (If death occurred in a hospital or institution give its NAME instead of street and number.)
2 FULL NAME .....			
Personal and Statistical Particulars.			
3 Sex .....	4 Color or Race .....	5 Single, Married, Widowed, or Divorced. (Write the word) .....	
6 Date of Birth (Month) ..... (Day) ..... (Year) .....			
7 Age ..... yr. .... mo. .... ds.			
8 Occupation .....			
9 Birthplace .....	(State or country)		
Parents.			
10 Name of Father .....	(State or country)		
11 Birthplace of Father .....	(State or country)		
12 Maiden Name of Mother .....			
13 Birthplace of Mother .....	(State or country)		
14 The Above is True to the Best of the Knowledge and Belief of (Informant) .....			
(Address) .....			
15 Place Where Remains are to be Sent .....		Date of Shipment .....	
Shipping Undertaker .....		(Firm Name) .....	
Address .....		19. ....	
16 Date of Death .....			
17 I HEREBY CERTIFY, That I attended deceased from .....		191. .... (Year)	
191. .... to .....		191. .... (Day)	
alive on .....		191. .... that I last saw h. ....	
occurred on date stated above, at .....		191. .... and that death	
was as follows: .....		m. The CAUSE OF DEATH	
Contributory, .....		(Duration) ..... yrs. .... mo. .... ds.	
(Secondary) .....		(Duration) ..... yrs. .... mo. .... ds.	
(Signed), .....		(Address) .....	
18 Length of Residence (For Hospitals, Institutions, Transients or Recent Residents) .....			
At place .....			
In the .....			
Where was disease contracted, .....			
if not at place of death? .....			
Former or usual residence .....			

The information on this certificate is an exact  
COPY  
of the official certificate filed at place of death.

# PERMIT OF BOARD OF HEALTH.

This Permit with above Certificate, must be presented to Initial Baggage Agent and delivered with body at destination.

Permission is hereby granted to remove for burial at..... 191.....  
*of*.....  
*ance with the laws of this State, printed on the back of this permit.*  
*If contagious or communicable, state name of person who is authorized to accompany the body.*

Detach above portion at this perforation, and hand to passenger in charge, to be delivered to the undertaker at destination. If burial is made in Indiana, the  
*Health Officer.*  
 seation or other person superintending, must send this permit and certificate to the State Board of Health in ten days.

DETACH AT THIS PERFORATION, AND SECURELY ATTACH THIS LABEL TO THE OUTSIDE CASE.

## CORPSE TRANSIT LABEL.

### FUNERAL DIRECTOR'S CERTIFICATE.

License No.....

I (or we) hereby certify that the accompanying dead body of..... in care of..... has been  
 to be transported to.....  
 prepared for transportation in conformity with rule No..... of the transportation rules for corpses in this State.....

Shipping Funeral Director.

Address.....

191.....

Station Baggage Agent must enter hereon a description of the corpse ticket, or check, the exact route and via what Junctional Points the corpse ticket or check  
 reads, which is held by the passenger in charge of the corpse.

Date..... 191.....

From..... to..... State of.....  
 No. of Ticket..... Form No. of Ticket.....  
 Via..... To..... R. R.....  
 Via..... To..... R. R.....  
 Via..... To..... R. R.....  
 Via..... To..... R. R.....  
 Via..... To..... R. R.....

Name of Passenger in charge..... Place of residence.....

Signed..... Station Agent.

*Ordered:* The Secretary or Assistant Secretary shall be a delegate to and represent the State Board of Health at the meeting of the National Pure Food League in New York City, May 6, 1914; also the meeting of the National Anti-tuberculosis Association in Washington, May 7, 1914, his expenses to be paid out of the appropriation for the Board.

#### SANITARY SURVEY OF FAYETTE COUNTY INFIRMARY.

The Secretary presented the following survey made by himself of the Fayette County Infirmary:

Site is splendid. The building is on the side of a hill and the drainage is excellent. There is a beautiful view. The poorhouse is northwest of the city, about three-fourths of a mile from the court house. There are one hundred and forty acres in the farm, most of it very good land.

Building.—Two story brick with stone foundation, cellar under the front part only. There is a frame addition in the rear. The building everywhere is in bad repair, built about fifty years ago and is insanitary in every particular. The dining-room for inmates is in the rear of a residence in the frame part, and has a flagstone floor. It is dark and cold. The kitchen adjoining cannot be kept clean, for the floor is very bad, the ceiling and walls cracked and in places the plastering is falling off.

There is a frame extension in the rear of the building entered by a door from the dining-room which has the flagstone floor. This extension contains two rooms. The roof leaks badly, plastering has fallen off in places, the walls are cracked and the rooms are damp, mouldy and untenable. They are used at present for storage.

The sleeping rooms are all of them very small, bad floors, bad ceilings, bad walls, damp, cold and in all ways insanitary. This applies to all the sleeping rooms.

In the rear of the main building is a two-story brick building which is called the laundry and which contains two bath rooms, one for the inmates and one for the superintendent. Both bath rooms are old, never were good, at the present time are out of repair, exceedingly insanitary and cannot be kept clean and sanitary.

There are two small one-story buildings on the hillside in the rear of the main building. One of these is used for pauper women and one for pauper men. Both are in bad repair, dilapidated, insanitary and insufficient. They are unfit for habitation.

Sewage.—Is disposed of by ordinary outhouses. The men's outhouse is near the barn and is bad in every particular. The women's outhouse is in the opposite direction, at a good distance and is insanitary and inadequate. There are no closets in the main building nor in the small houses spoken of above.

Water Supply.—Is from a well. Character and depth of the well could not be learned. The water is probably usable.

Barn.—Is a good one and is not quite 300 feet distant from the main building. It was in passable condition when inspected. This is too close

to have a barn of animals to any dwelling house, and because of its nearness constitutes an insanitary feature.

**Summary.**—The Fayette County Infirmary, situated near Connorsville, has but one thing to recommend it, and that is its site. As said before, the site is very excellent: indeed, it is beautiful. It is true that from the cellar to the garret every feature of the house of the main building is insanitary and bad. Fayette County should have a new poorhouse. It is indeed poor economy and bad business not to care for the unfortunate pauper in the right way, and the right way is not practiced at this institution.

**Remarks.**—The plans for remodeling the Fayette County Infirmary, which were prepared by Mr. Garns, architect, would produce very passable conditions, but far from ideal. The plans which were examined and which are known as the "Last Plans by Architect Garns," are acceptable. If they were adopted and executed, sanitary conditions, also convenient conditions, and also moral conditions would exist.

**Recommendations.**—It is recommended to the authorities of Fayette County that a new infirmary, properly planned, be built. If this cannot be done, then it is recommended that the present buildings be remodeled according to the "Last Plans of Architect Garns."

After consideration the above survey was ordered spread of record.

#### INVESTIGATION OF SEWAGE DISPOSAL AT SOUTHERN INSANE HOSPITAL FOR INSANE.

The report was read and approved and ordered spread of record. See page 175, Report of Chemical Department.

#### SCHOOLHOUSES IN DISTRICTS 3, 4, 11 IN FRANKLIN TOWNSHIP, MARION COUNTY.

The Board received a request from H. J. Brown, trustee, in which it was shown that \$9,880.60 was available in this township for school building purposes. Trustee Brown requested that the condemnation on these school buildings be postponed for one year. On consideration the Board ordered that condemnation on these buildings be in full force and effect and that the trustee be instructed to proceed with preliminary plans for construction of a consolidated building.

#### DISTRICT No. 5, BUCK CREEK TOWNSHIP, HANCOCK COUNTY.

Under date of March 26, the State Board of Health was requested to make a sanitary survey of the present school site and also a proposed new site, both of which are described in the letter



of request from the county superintendent, George J. Richmond. Pursuant with this request, Dr. King, Assistant Secretary, made a sanitary survey of both sites on March 26, 1914, and submitted the following report:

The present schoolhouse site covers an area of 267 ft. by 150 ft., or a little less than one acre in extent. The east line of the present site is within 200 feet of Buck Creek, a stream flowing to the south and subject to great variation in the amount of its flow. In the summer time, water stands in pools in this stream, while in the flood season the stream spreads over the low lands along its banks, and at such times the flood spreads over a considerable portion of the school site at the southeast corner of the same.

The ground to the west, northwest and north of this school site is higher than the site, so that surface drainage from a considerable surrounding area finds its way onto the school site. This is plainly shown by the fact that the school ground to the north of the school building is muddy, and on the day of the survey showed innumerable footprints from one to three inches deep.

When Buck Creek is at flood stage, water backs into the basement of the school building through the outlet tile. This tile or basement drain leads south from the basement to a tile at the north side of the road, which road tile leads directly to Buck Creek. Water standing in the basement at the time of the survey, and it was stated that this was the usual condition whenever the water in Buck Creek reached the flood stage.

On the opposite side of Buck Creek, and about 1,000 feet away is a cemetery which drains into the creek above the point where the outlet drain from the basement of the school building enters the stream. This is not a matter of any significance, so far as the sanitary condition of the school site is concerned, but is mentioned merely because a cemetery somewhat similarly located in reference to the proposed new site has been brought into the evidence in this case.

I also inspected the proposed new site which is described in your letter. This site covers an area of 360 x 363 ft., or 3 acres. This site is slightly higher than the surface surrounding it, and so far as can be judged from surface appearance is well adapted for a schoolhouse site. The county surveyor of Hancock County has made a survey of this proposed site, the facts of which survey appear in the evidence, so that no further comment is necessary. The cemetery which has been introduced in evidence in reference to this proposed site is of no significance whatever from a sanitary standpoint and can be disregarded the same as the cemetery above mentioned in reference to the present school site.

In conclusion I have the honor to report that the present school site must be considered insanitary in the broad sense of the term as applied to the character and location of school sites in relation to the comfort and welfare of school pupils. The considerations under which this decision was reached are as follows:

1. This school site is lower than the ground adjacent to the west, northwest and north, so that surface drainage from this adjacent territory is toward and onto the school site.

2. Surface water stands on a considerable portion of this school site, rendering it unfit for school ground and playground use.

3. A considerable portion of the school ground is under water whenever Buck Creek reaches a flood stage.

4. Water appears in the basement whenever Buck Creek reaches a flood stage.

5. The present school site consists of less than one acre of ground and does not furnish sufficient room for proper playgrounds.

After consideration of the above it was,

*Ordered:* That the report of Dr. King be concurred in, that the present schoolhouse site be condemned as insanitary and that notice of such condemnation be sent to Clarence Luce, trustee of Buck Creek Township.

#### SCHOOL BUILDING AT ALBANY, DELAWARE COUNTY, INDIANA.

A statement from Chas. M. Smith, secretary of the Albany School Board, was presented. In this statement was set forth the valuation of the taxable property as \$409,130 together with the statement that the board of town trustees would join with the school board in making an appropriation for a new school building, and a further statement showing that approximately \$16,000 would thus be available for school building purposes. In view of the above facts, it was ordered by the board that the condemnation on this building should not be extended, and that the school board of Albany be required to take prompt and definite steps to comply with the condemnation.

*Ordered:* The annual conference of the health officers of the State shall be held in Indianapolis May 26th and 27th. The Secretary shall prepare a program, provide a place for holding the meeting and is authorized to pay the expenses and give an honorarium not to exceed ten dollars to three speakers from out of the city.

*Ordered:* The State Board of Health shall be represented at the Eighth Annual Conference of Weights and Measures Officials at the Bureau of Standards, May 26th to 29th, by H. E. Barnard and John T. Willett, their expenses to be paid out of the Weights and Measures Fund.

## **SPECIAL MEETING.**

**MAY 26, 1914.**

Called to order by President Davis at 12:00 m.

**Present:** Drs. Davis, Freeland, Boyers, Sutton, Hurty.

The President announced the object of the meeting was to attend the annual health officers' conference, and to transact any business which might come before the Board.

The Secretary presented the following as the program of the meeting and said that up to noon the program had been followed as printed:

**ANNUAL HEALTH OFFICERS' CONFERENCE, HELD UNDER THE  
AUSPICES OF THE INDIANA STATE BOARD OF HEALTH,  
AT INDIANAPOLIS, MAY 26 AND 27, 1914.**

"The Health Officer is an important official and his work is of far greater value to the public than has heretofore been recognized."—*Governor Ralston.*

**PROGRAM.**

*First Session, Tuesday, May 26th, 10:00 a. m.*

**Call to Order—**

**T. Henry Davis, President State Board of Health.**

**Election Presiding Officers—**

The Conference will select a presiding officer for each day of the Conference at this time.

**Announcements. Committees. Business.**

**Public Health Work in Clinton County—**

**C. A. Zinn, Deputy Health Commissioner.**

**Discussion—**

**R. M. Campbell, Health Commissioner, Tippecanoe County.**

**Discussion—**

**School Inspection and Trachoma in Bartholomew County—**

**J. H. Morrison, Health Commissioner, Bartholomew County.**

**Discussion—**

**Dr. George F. Keiper, Lafayette.**

"Within certain natural limitations a community can determine its own sickness and death rate."

*Second Session, 1:30 p. m.*

**The Social Evil in its Relation to Public Health—**

John H. Landis, Health Officer, Cincinnati, Ohio.

**Discussion—**

Porter Linthicum, Health Officer, Evansville.

**Importance of Vital Statistics—**

F. G. Thornton, President Clay County Medical Society.

**Discussion—**

S. E. Earp, Editor Indianapolis Medical Journal.

**Co-operation with the State Society for the Study and Prevention of Tuberculosis—**

W. D. Thurber, Secretary State Society.

Discussion. Question Box. Conference.

*Third Session, at City Hospital.*

The Indianapolis Medical Society will hold a reception and clinic at the City Hospital at 8:00 p. m. The clinic will be one of special interest to health officers and all are expected to attend. Take Blake Street cars direct to the Hospital. Car service will be announced at the Conference.

"Your County or City can have just as much health as it cares to purchase."

*Fourth Session, Wednesday, May 27th, 9:00 a. m.*

Governor Ralston extends a cordial invitation to the Conference to meet him in the Executive Offices at 9:00 a. m.

Health Officers will assemble in the corridors of the State House promptly at 9:00 o'clock. After greeting the Governor the Conference will again convene at the Claypool Auditorium at 10:00 a. m.

**The Need for the Whole Time Health Officer—**

Hugh A. Cowing, Muncie.

**Discussion—**

H. O. Bruggeman, Fort Wayne.

**The Health Officer and the Public School—**

A. O. Neal, State High School Inspector.

**The Social Nurse as a Public Health Worker—**

C. N. Hilliard, Professor Sanitary Engineering, Purdue University.

By order of the State Board of Health, certificates of attendance will not be given out until at the close of the Conference.

The attendance was reported by the clerk as 302.

The following report of survey of high school site, at Richland City, Luce Township, Spencer County, was read:

Survey made May 21, 1914, by W. F. King, Assistant Secretary.

In response to a petition signed by a number of citizens of Luce Township, I made a sanitary survey of a proposed schoolhouse site at

Kensington in Luce Township, and also a sanitary survey of a schoolhouse site at Richland City, on which site a high school building is now in process of construction. There has been much contention in regard to the location of a high school building for this township, and many of the legal phases in reference to the establishment of the high school for this township have been taken into the courts. With the legal phases of the matter your inspector, of course, had nothing to do. An injunction proceeding is now pending in the court to enjoin the trustee from constructing a high school building at Richland City. This injunction case will be heard in the Jasper Circuit Court within the next week or ten days, but in the meantime, the school building is in process of construction, and at the time of the survey, the walls were completed up to first story of the building.

#### THE KENSINGTON SITE.

This site is located near the center of the township both geographically and from the standpoint of the school population to be served. The proposed site consists of approximately three acres of ground fronting on a main north and south road and located a little more than 500 feet from a main east and west road and approximately the same distance from the main line of the interurban railroad from Evansville to Rockport. Kensington Station on this main line of the interurban railroad is at the junction of the two highways above mentioned and consequently is a little more than 500 feet from the proposed school site. This site is located on high ground, with splendid surface drainage in every direction from the site, and within convenient distance from a tile drain which empties into a dredged ditch, so that splendid underground drainage is assured. In the opinion of your inspector the above site is ideal for school purposes from every standpoint.

#### THE RICHLAND CITY SITE.

This site consists of approximately one acre of ground more or less, and is located immediately to the west and continuous with the present site of the grade school in Richland City. It is claimed by those who oppose the establishment of a high school at this site, that it will be impossible to secure proper drainage. It is impossible for your inspector to state whether or not proper drainage can be secured, for the reason that the basement floor level of the building now under construction and the level of a tile drain to the southeast of the proposed site and into which the said basement will be drained cannot be determined accurately except by having a surveyor establish the said levels. At the northwest of this school site there is a small area of low ground upon which water undoubtedly stands in wet weather. At the southeast corner of the grade school site, which is continuous with the high school site, there is a small area on which water undoubtedly stands in wet weather. Both these small areas are within 500 feet of the high school site, but your inspector was unable to determine whether or not such low areas constitute "swampy ground" within the meaning of the rules of the State Board of Health, for the reason that an unusual drought has prevailed in this section and no water stands at present on the ground in question. Immediately in

front of the high school building now under construction on the grade school ground are the outdoor closets connected with this grade school. These closets are filthy and indecent and constitute an insanitary condition in reference to the new high school building. The trustee, however, assured your inspector that these closets would be removed. Unless it can be shown by a surveyor's level that the basement of the new high school building cannot be drained and with the removal of the outdoor closets referred to above, it is the opinion of your inspector that the school site at Richland City should be considered sanitary.

#### THE PROPOSED HIGH SCHOOL BUILDING.

Your inspector took advantage of this opportunity to look over the plans and specifications under which the high school building at Richland City is being constructed. Because of the various injunction suits and other litigation in reference to the location of this high school several different plans and specifications seem to have been submitted and adopted. It was difficult indeed for your inspector to determine the real plans and specifications according to which the building is finally to be constructed. However, in consultation with the contractor and trustee on the ground, and afterward in consultation with the architect, Harry E. Boyle, and with John O'Donnell of the O'Donnell Steam Heating Company, both of Evansville, your inspector was enabled to get a fair idea of the plans and specifications as finally decided upon. Your inspector was enabled to determine that said plans and specifications fail to comply with the Sanitary Schoolhouse Law and with the rules and regulations of the State Board of Health in the following particulars, to wit:

- 1st. Fire-proof construction is not provided for the boiler room.
- 2d. The specifications called for the installation of a dry closet, while the plans seem to show nothing more than a latrine with vault connected to the stack.
- 3d. Urinal stalls are not shown in the boys' toilet.
- 4th. A common passageway is shown to the toilets in the basement.
- 5th. The plans provide for direct-indirect heating and ventilation with vent stack in each classroom of 340 square inches cross-sectional area and wall openings of 168 square inches free area. According to the rules of the State Board of Health each vent stack should have a minimum cross-sectional area of 368 square inches and the wall openings should have a combined free area of 368 square inches.
- 6th. A floor register is shown in the corridor of the first floor.
- 7th. Receptacles for water in connection with the floor registers are not shown.
- 8th. Exit stairways and exit doorways are connected by corners and angles.
- 9th. Floor registers are shown in the corridors in such location as to become a possible obstruction.
- 10th. The auditorium on the second floor which is to be used not only as an assembly room, but also for classroom purposes, is lighted from two sides.

11th. Proper ventilation is not provided in the cloakrooms on the second floor.

12th. The specifications called for vent stacks to open one foot above the attic floor.

It is recommended that the trustee, S. C. Ferguson, Lake, Indiana, be ordered to cause the following changes to be made in the plans and specifications for this building before proceeding to the completion of the building:

- 1st. To provide for fire-proof construction of boiler room.
- 2d. To provide a crematory closet according to the rules of the State Board of Health.
- 3d. To provide proper urinal stalls in the boys' toilet room.
- 4th. To provide separate passageways leading to the toilet rooms.
- 5th. To provide suitable sized vent stacks and suitable wall openings for ventilation as required in the rules and regulations of the State Board of Health.
- 6th. To eliminate the floor registers.
- 7th. To provide proper receptacles for water in connection with floor radiators, in order to insure a proper humidity of air.
- 8th. To provide for the construction of exit stairways and exit doorways in such manner as to eliminate corners and angles as required in the rules and regulations of the State Board of Health.
- 9th. To cause floor registers in corridors to be so located as to not become an obstruction to the free use of such corridors.
- 10th. To provide for unilateral lighting in the auditorium in case such auditorium is to be used for classroom and study purposes.
- 11th. To provide proper heating and ventilation in the cloakrooms on the second floor.
- 12th. To provide for the vent stacks being carried through the roof instead of opening one foot above the attic floor.
- 13th. To require a copy of the plans and specifications showing the changes ordered as above to be submitted to the State Board of Health by the trustee or architect in order that the State Board of Health may know that its orders and instructions have been fully complied with.

After consideration, the following order was adopted:

MAY 26, 1914.

*S. C. Ferguson, Trustee of Luce Township, Spencer County, Indiana:*

Dear Sir—You are hereby ordered and instructed to cause the following changes to be made in the plans and specifications for the Luce Township high school building now in process of construction at Richland City, said township, and to submit a copy of such revised plans and specifications to the State Board of Health before proceeding to the final completion of said high school building:

1. To provide for fire-proof construction of boiler room.
2. To provide a crematory closet according to the rules of the State Board of Health.
3. To provide proper urinal stalls in the boys' toilet room.

4. To provide separate passageways leading to the toilet rooms.
5. To provide suitable sized vent stacks and suitable wall openings for ventilation as required in the rules and regulations of the State Board of Health.
6. To eliminate the floor registers.
7. To provide proper receptacles for water in connection with floor radiators, in order to insure a proper humidity of air.
8. To provide for the construction of exit stairways and exit doorways in such manner as to eliminate corners and angles as required in the rules and regulations of the State Board of Health.
9. To cause floor registers in corridors to be so located as to not become an obstruction to the free use of such corridors.
10. To provide for unilateral lighting in the auditorium in case such auditorium is to be used for classroom and study purposes.
11. To provide proper heating and ventilation in the cloakrooms on the second floor.
12. To provide for the vent stacks being carried through the roof instead of opening one foot above the attic floor.
13. To require a copy of the plans and specifications showing the changes ordered as above, to be submitted to the State Board of Health by the trustee or architect in order that the State Board of Health may know that its orders and instructions have been fully complied with.

*Ordered:* That Dr. J. L. Freeland should at any time that is pleasing to him, make visits in the State either personally or with the Secretary, for the purpose of promoting the public health, make investigations, etc. His expenses to be paid out of the funds of the Board.

There being no more business the board adjourned and ordered a special meeting for May 27th, at 12 m.



## **SPECIAL MEETING.**

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**MAY 27, 1914.**

Called to order by Vice-President Boyers.

Present Drs. Boyers, Freeland, Sutton, Hurty.

The Vice-President announced the object of the meeting was to consider the proceedings and resolutions of the health officers, and to receive the Secretary's report.

The Secretary has to report that the Annual Health Officers' Conference was held at the Claypool Hotel in the Auditorium on the eighth floor as per arrangements. 302 officers were in attendance and the program as given heretofore was carried out with the exception of the presentation of the paper by Prof. C. N. Hilliard. By some error unexplained, a motion to adjourn was offered and the chairman immediately put the same and the conference adjourned. It was to be regretted that this mishap occurred. The conference was in every way a success. The large auditorium of the hotel was well filled with attentive and interested health officers. The discussions of the papers were spirited and deeply interesting. It probably is correct to say this was the best health officers' meeting ever yet held under the auspices of the State Board of Health.

### **WINCHESTER SCHOOLHOUSE.**

After consideration of the sanitary survey of the North Ward School Building in Winchester, Randolph County, Indiana, the same was condemned.

After consideration of the sanitary survey of the old high school or central school building in Winchester, Randolph County, Indiana, the same was condemned.

### **CARROLL COUNTY SCHOOL HOUSE.**

After consideration of the sanitary survey of the Ockley schoolhouse in District No. 7, Madison Township, Carroll County, Indiana, the same was condemned.

*Ordered:* After consideration of the evidence furnished by the trustee of Jackson Township, Hamilton County, showing that it would be impossible, because of lack of financial ability, to construct a new school building in District No. 2, Jackson Township, Hamilton county, the same having been heretofore condemned, therefore the said condemnation was extended to June 1, 1915.

*Ordered:* Dr. William F. King, Assistant Secretary, and Mr. H. E. Barnard, Chemist, shall represent the State Board of Health at the annual meeting of the Association of State and National Food and Dairy Officials to be held at Portland, Maine, July 13 to 18, 1914. The expenses of Dr. King to be paid out of the appropriation for the State Board of Health, and the expenses of Mr. Barnard to be paid out of the appropriation for the Pure Food and Drug Department.

**REGULAR QUARTERLY MEETING OF THE INDIANA  
STATE BOARD OF HEALTH FOR THE SECOND  
STATISTICAL AND THIRD FISCAL QUAR-  
TER, BOTH ENDING JUNE 30, 1914.**

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JULY 10, 1914.

Called to order by President Davis at 10:00 p. m.

Present: Davis, Boyers, Sutton, Freeland, Hurty.

Minutes of last regular meeting held April 10, also minutes of the special meeting held May 26; also minutes of the special meeting held May 27, were all read and approved in each separate part and as a whole.

**REPORT OF SECRETARY FOR SECOND QUARTER END-  
ING JUNE 30, 1914.**

During the three months composing the quarter, namely, April, May and June, it may be said no real epidemics have occurred, except the typhoid epidemic in and near Decatur, Indiana. In this instance there were thirty cases reported and six deaths. The cause was traced to a dairy. There have been localities in the State where two, three or four cases of zymotic diseases have appeared, but no large outbreaks have been reported. It would be best to modify this in regard to smallpox, but this disease is so rarely fatal these days it is quite true to say that it is not a dangerous malady and that very possibly the time is near when it will be cut off the quarantinable lists. .

Daily requests are received for the Indiana Mothers' Baby Book, which is certainly attracting a great deal of attention. Letters have been received from China, England and other foreign countries concerning this book. The idea has evidently impressed very many as a good one.

A matter worthy of remark in this report is Public Health Day at Anderson. The Merchants' Association of that city desired to do something original and new for the advancement of the best interests of the city. The Secretary was invited to attend a ban-

quet of the Merchants' Association, and speak upon the importance of the public health. During the speech he recommended that Anderson hold a Public Health Day, that all the merchants participate in it, that the pupils of the school be enlisted and that a Public Health Procession be gotten up. The Merchants' Association accordingly appointed June 30th as the date and made their preparations. The merchants resolved to dress their windows so as to present hygiene and sanitation to the public. For Health Day the druggists removed all medicines and advertisement of medicine from their windows and placed therein disinfectants, tooth brushes, hair brushes and all articles pertaining to the conservation of health. The hardware stores dressed their windows with garbage cans, rakes, hoes, brooms, and like articles pertaining to cleanliness. One dry goods store had a window with a porcelain bath tub surrounded by heaps of towels of different grades and qualities and a great heap of soap and all bath brushes and shower appliances that go with the bath. In the forenoon a public meeting was held in the Presbyterian Church where speeches were made upon public health. Another was held at the same place in the afternoon. In the evening a large audience heard Mayor Joseph Bell of Indianapolis upon "Municipal Cleanliness and Better Health," and also a public health speech by Dr. J. C. Bacon of Chicago. In the afternoon at 2:00 o'clock the public health procession was presented. This procession was over a mile long and over 2,500 people participated. It contained many remarkable features. The pupils of the high school were permitted to get up their own displays. One feature in the procession was 100 little girls dressed as Dutch housewives, excepting wooden shoes, which could not be obtained. They carried brooms, and soap and little dish mops. This was followed by 100 little boys dressed as Dutchmen and they carried rakes, hoes and mops and other articles indicative of cleanliness. This was probably the most impressive feature of the procession. Another feature was the big fly and skeleton belonging to the State Board of Health. This fly, almost six feet long, was suspended from a frame over an automobile truck. On the truck was a battered garbage can running over with garbage and labeled "The Birthplace of the Fly." There was also on the truck a manure box, broken and running over, and it too was labeled "Birthplace of the Fly". This exhibit was followed by a crowd of boys armed with fly traps, swatters and bundles of fly poison, and occasionally they would stop and give their anti-fly yell as follows:

Swat the Fly,  
Kill the Fly,  
Prevent the Fly  
You and I,  
Rah, rah, rah.

There were other excellent features, but these are enough to make a record of this remarkable event. This is believed to be the first instance when the procession or pageant has been used to advance public health work.

As the records show, the Annual Health Officers' Conference was held in May, and mention is here made to call attention to the fact that it was very successful. The attendance was very large, 301. A close and undivided interest was maintained at all sessions.

A matter of great interest, and which should be rementioned for fuller record is the fact that on May 6th a complete sanitary survey of Lawrence County was begun by the U. S. Public Health Service upon invitation of the State Health Commissioners. Lawrence County in the ten years' summary of statistics was shown to have next to the highest typhoid death rate of any county in the State. Pike County had the highest rate, namely 64.9 and Lawrence County had a rate of 64.3. Surgeon-General Blue of the U. S. Public Health Service, after considerable correspondence upon the subject, consented to send six officers under his command to Lawrence County to make, as has already been said, a complete sanitary survey. These officers are under the command of Surgeon Grimm. They make their headquarters at Bedford, the county seat, and from there they will visit in automobiles and carriages every home in the county, and a score card survey is made of every house. The officers instruct the people whenever an opportunity is offered and also distribute pamphlets upon typhoid fever and other diseases. Dr. Grimm and his men hold public meetings and, to supplement and aid them, I sent three of the inspectors who have spent in all four weeks in that county. The exhibit has also been in the county and is carried from point to point and explained under the charge of Mr. George King. As said in the beginning, this is a very important sanitary movement in this State, and so far as I know is the first time any State has made so complete a typhoid and general health survey of a whole county. We may look forward with much interest to the report of this work. The people of the county have received the investigation

kindly, the papers have extended their aid in printing notices and the Bedford Merchants' Association has passed a resolution approving the work and thanking the State Board of Health.

The status of the infectious diseases as is always given in these quarterly reports was as follows:

## SMALLPOX.

	<i>Cases.</i>	<i>Deaths.</i>	<i>Counties Invaded.</i>
April, 1913.....	540	..	35
April, 1914.....	449	1	44
May, 1913.....	359	..	37
May, 1914.....	420	1	41
June, 1913.....	208	1	34
June, 1914.....	313	1	30
<hr/>			
Total, 1913.....	1,102	1	106
Total, 1914.....	1,182	3	115

## TYPHOID FEVER.

	<i>Cases.</i>	<i>Deaths.</i>	<i>Counties Invaded.</i>
April, 1913.....	117	27	37
April, 1914.....	83	33	26
May, 1913.....	81	32	31
May, 1914.....	79	21	35
June, 1913.....	96	25	35
June, 1914.....	124	31	30
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Total, 1913.....	294	84	103
Total, 1914.....	286	85	91

## VISITS BY THE SECRETARY.

The Secretary made the following visits:

*April 5, Gas City and Upland.*—I went to Gas City upon invitation of the city council. Upon arrival a conference was held in regard to the sanitary conditions of the city and in the evening a public address was given to a large audience which passed resolutions of thanks. From Gas City I went to Upland to deliver a lecture before the students of Upland University. This lecture was the usual one concerning the importance of sanitation and preservation of health. Resolutions of thanks were adopted.

*April 29, Anderson.*—This visit was on account of the celebration of Public Health Day, elsewhere described somewhat in detail in this report.

*May 5, Sullivan.*—Upon invitation of the city authorities and the Woman's Civic Association, Sullivan was visited upon this date. A sanitary inspection of the city was made and report given to the city council convened for that purpose. The city council passed a resolution inaugurating a general clean up day and arranged a future meeting to consider the public health ordinance recommended by the State Board of Health. Before the Civic League in the evening I addressed a large audience which was very appreciative and which passed resolutions of thanks and confidence. I also spoke before the high school students in the afternoon.

*May 8, Bedford.*—Object of the visit was to confer with Surgeons Grimm and Lumsden and to do what could be done to further the county sanitary survey just begun.

*May 20, New Albany.*—This visit was made for the purpose of delivering a public lecture under the auspices of the Woman's Civic League and also to inspect the water situation there. The State Board of Health on December 17, 1913, issued an order that the New Albany water should be filtered, the said order being given under the recent law conferring powers for such purposes upon the Board. Upon arrival at New Albany a consultation was held with the mayor and committee on public health of the council; also Hon. Michael Thornton, representative from that county. The ground was gone over thoroughly, but as the case concerning filtration was now in the courts nothing could be done but to wait their action.

*May 22, Pittsboro.*—Object of this visit was to make a public address to the people of Pittsboro upon public health and to meet with the local medical society. An address was delivered to an audience filling the Baptist Church.

*June 4, Bedford.*—This visit was made to again confer with Surgeons Lumsden and Grimm in regard to the sanitary survey going on in the county.

*June 11, Osgood.*—Upon invitation of the Woman's Civic League of Osgood I visited the place to deliver a public lecture under the auspices of the league. I also took occasion while there to confer with the city authorities and city health officer upon needed public health work. The lecture was delivered to a good-sized audience and was well received.

*June 14, Liberty.*—Object of this visit was to deliver a public lecture in the Methodist Church. A large audience was present and seemed to appreciate the lessons in hygiene which were presented.

*June 16, Washington and Atlantic City.*—My visit to Washington was made according to commands of the Board to represent it at the Annual Conference of State Boards of Health with the U. S. Public Health Service, under the command of Surgeon-General Blue; also to attend the Annual Conference of State Boards of Health. It seems unnecessary to give an extended report of the programs of these two meetings, but it will suffice to say that the three days were given up to a consideration of many subjects concerning hygiene. There were no social entertainments and so, as said, the entire time was occupied with work. From Washington I went to Atlantic City to attend the annual meeting of the American Medical Association. The Section on Preventive Medicine and Public Health had for its Chairman this year, Dr. Mazyck Ravenel, Professor of Bacteriology in the University of Wisconsin. The program was a long one, extending over three days. Every paper was of deep interest and was thoroughly discussed. The section was honored by visits from the President of the Association, Dr. Victor C. Vaughn, also Surgeon-General Gorgas of the U. S. Army and by the retiring president, Dr. John A. Witherspoon. I visited but one other section, which was the Section on Medicine. The scientific exhibit was very full and complete and would take several thousand words to adequately describe it. In conjunction with the scientific exhibit, the Indiana State Board of Health presented its moving picture film showing the public Health Day parade at Anderson, also the film entitled "Fighting Tuberculosis in Indiana." The Board also presented in its own name the film furnished by the Indianapolis News, entitled—Cheeryvale. All three of these films were viewed repeatedly by large audiences and created a favorable impression concerning sanitation in Indiana and the work of the State Board of Health.

#### RULE ESTABLISHING STANDARD FOR CONDENSED MILK AMENDED.

Dr. Hurty moved the repeal of paragraph 6, Section (b) of the rules of the Indiana State Board of Health regulating minimum standards for food and drugs, defining specific adulterations and declaring proper methods of collecting and examining drugs and articles of food passed by the State Board of Health July 9, 1909, and the substitution of the following for the said paragraph repealed:

"Evaporated Milk, Unsweetened Condensed Milk, is milk from which a considerable portion of the water has



been evaporated and contains not less than seven and eight-tenths per cent. (7.8%) of milk fat, and not less than twenty-five and five-tenths per cent. (25.5%) of total milk solids."

After due consideration the above motion was unanimously adopted.

LETTER FROM ATTORNEY GENERAL.

INDIANAPOLIS, June 2, 1914.

*Dr. J. N. Hurty, Secretary, State Board of Health, Indianapolis, Indiana:*

Dear Sir—In reply to your letter of May 29th as follows:

"The stream pollution statute of the State, known as the McGinnis Law, gives certain control to the State Board of Health over streams, the waters of which are used for domestic purposes. The question we desire to ask is—What does this term 'domestic uses' mean?

We are informed of the decision of the Supreme Court of Nebraska which says:

'The use of a stream in the ordinary way by a riparian owner for drinking and cooking purposes and for watering his stock is a domestic use'. This is the case of *Crawford County vs. Hall*, 93 N. W. 781, 60 L. R. A. 889, on page 908, 60 L. R. A.

We are also informed the Supreme Court of Colorado has a decision that domestic uses mean—

'such use as the riparian owner has at common law, the right to take water for himself, his family, or his stock, and the like.'

If it appears that this is a true definition of domestic uses, then the State Board of Health will have power over the pollution of certain streams not heretofore supposed to come within its jurisdiction."

I beg to say, that the definitions of what is a "domestic use" of a stream of water, quoted in your letter, are in substance correct, as decided by the courts of many States.

Under the law to which you refer, the State Board of Health has jurisdiction only in cases where pollution materially injures for domestic use the character of the water, to the injury of public

health or comfort, or where the source of any public water supply is polluted.

I have the honor to be,

Very truly yours,

THOS. M. HONAN.

#### SCHOOLHOUSE CONDEMNATIONS EXTENDED.

After due consideration, condemnations of the following school-houses were extended for one year, or until June 15, 1915:

Boone County—Districts Nos. 1 and 2, Prairie Township; Districts Nos. 3, 4, 12, Jackson Township.

Carroll County—District No. 5, Carrollton Township; District No. 7, Madison Township, Ockley School.

Clark County—Charlestown School.

Delaware County—Albany School.

Fayette County—District No. 7, Jackson Township, Everton School.

Hancock County—District No. 5, Buck Creek Township; District No. 2, Brandywine Township, Cowden School.

Hamilton County—Atlanta School.

Howard County—Districts Nos. 2, 3, 5, 6, 7, Howard Township.

Jefferson County—District No. 11, Madison Township.

Marion County—District No. 10, Wayne Township, Ben Davis School.

Martin County—District No. 6, Lost River Township, Powell School.

Monroe County—Ellettsville School.

Spencer County—Chrisney School.

Sullivan County—Dugger School.

Tipton County—District No. 9, Madison Township, Hobbs School; District No. 8, Madison Township.

Wabash County—Lagro Township, Lincolnville School.

Warren County—Districts Nos. 4 and 5, Kent Township.

Warrick County—Pigeon Township, Selvin School.

Randolph County—North Ward School Building, Winchester; Central School Building, Winchester.

#### SCHOOLHOUSES CONDEMNED.

After consideration of the sanitary surveys duly made and presented, and after further consideration of all evidence presented, the following schoolhouses were condemned, the condemnation to take effect August 1, 1914:

Laurel School, Franklin County.

District No. 1, Milltown School, Fayette County.

District No. 5, Plox School, Union Township, Howard County.

District No. 2, Shelbyville, Addison Township, Shelby County.

## INDIANAPOLIS SEWAGE DISPOSAL.

In accordance with the order of the State Board of Health the city authorities reported in regard to the progress being made toward the final installation of a sewage disposal system. The report was verbal and to the effect that the experimental plant with its one Imhoff unit had been continuously in operation for three months, that satisfactory progress had been made toward determining the composition, character and quantity of the city sewage. The engineer, Mr. Jeup, expressed his opinion that by November they would have in hand all the data necessary upon which to make plans for an adequate and efficient sewage disposal plant. The city authorities were requested by the secretary to make written report to the State Board of Health, to be considered at its regular quarterly meeting to be held Friday, October 9, 1914. Promise was given that a written report would be presented.

# **REGULAR QUARTERLY MEETING OF THE INDIANA STATE BOARD OF HEALTH FOR THE THIRD STATISTICAL AND FOURTH FISCAL QUAR- TER, BOTH ENDING SEPTEMBER 30, 1914.**

OCTOBER 9, 1914.

Called to order by President Davis, at 1:00 p. m.

Present: Drs. Davis, Boyers, Freeland, Sutton, Hurty.

Minutes of the last regular meeting held July 10 were read and approved in each separate part and as a whole.

## **REPORT OF THE SECRETARY FOR THE THIRD STATIS- TICAL AND FOURTH FISCAL QUARTER, BOTH ENDING SEPTEMBER 30th.**

The fiscal year for the State ended September 30th. The appropriations and expenditures with the amount which reverted from the different funds appropriated to the State Board of Health are presented herewith:

	<i>Appropriation.</i>	<i>Amount. Reverted.</i>
Executive and Statistical Department.....	\$27,000 00	\$152 21
Food and Drug Laboratory.....	20,000 00	43 73
Water and Sewage Laboratory.....	5,000 00	6 29
Bacteriological and Pathological Laboratory....	15,000 00	5,001 56
Weights and Measures.....	10,000 00	4,171 49
Cold storage .....	490 00	33 49
Hydrophobia .....	6,362 43	.....

NOTE.—Specific appropriations amounted to \$12,500.00, of which \$5,628.51 reverted.

From the above it will be seen the total appropriation for the State Board of Health was \$83,852.43, and the total amount reverted was \$9,408.77. All items will be supplied in the usual annual fiscal report.

During the quarter a few epidemics, not extensive and mild in character, of diphtheria and scarlet fever have occurred. The mortality from these diseases constantly grows less. The opening of the schools in September was not followed with the usual amount

of epidemics and closures. The exact number of schools closed must be presented later because the same have not yet been collected.

An event worth recording here was the exhibit of the State Board of Health at the State Fair September 7th to 12th. The Fair authorities granted free privileges. A side show tent was rented, its dimensions being 100 x 30 feet. This was erected near the Coliseum. Within this tent was displayed the usual exhibit of the State Board of Health; also an exhibit of weights and measures; an exhibit from the pathological and bacteriological laboratory; and the exhibit of the Indiana Society for the Study and Prevention of Tuberculosis. One half of the tent was set apart for lectures. Seats were provided and a screen erected and a stereopticon was used. Both still pictures and moving pictures were presented. Either the Secretary or Assistant Secretary was in attendance at all times, making lectures and explanations. A clerk from the office was also present to hand out circulars and to give such instructions and information as might be asked for. On the exterior of the tent four large banners, similar to those used by side shows were displayed. Above these banners was a long streamer announcing "The World's Greatest Side Show," staged by the Indiana State Board of Health and the Indiana Society for the Study and Prevention of Tuberculosis.

The first of the four great banners represented a little child away from diphtheria, scarlet fever and other diseases. The second announced the "Mysterious Ticker", with a picture. This ticker by striking upon a bell announced whenever a tuberculosis death occurred. This attracted much attention. The third canvas was an enormous microscopic field with the tuberculosis organism painted thereon. This banner announced the "tuberculosis organism as the most powerful bug in the world." It kills 4,000 men and women in Indiana annually. The fourth and last banner was a picture of death with a scythe reaping a harvest of babies, with the announcement that "20 per cent. of all babies born die in the first year of life." The Indianapolis Newsboys Band played in front of the tent twice daily and at the lowest estimate 20,000 people visited the exhibit. It is believed this is the first time the side show idea was ever used to promote the public health cause. That it was successful and within the bounds of propriety there is no question. It secured a large audience and a strong impetus was given to the cause.

## VITAL STATISTICS.

The usual statistics concerning smallpox and typhoid are given herewith for the quarter:

## SMALLPOX.

	<i>Cases.</i>	<i>Deaths.</i>	<i>Counties Invaded.</i>
July, 1913.....	110	1	22
July, 1914.....	102	..	20
August, 1913.....	135	..	62
August, 1914.....	85	1	19
September, 1913.....	69	..	15
September, 1914.....	140	..	24
	—	—	—
Total, 1913.....	314	1	99
Total, 1914.....	327	1	63

## TYPHOID FEVER.

	<i>Cases.</i>	<i>Deaths.</i>	<i>Counties Invaded.</i>
July, 1913.....	397	47	51
July, 1914.....	193	34	48
August, 1913.....	722	112	75
August, 1914.....	392	65	61
September, 1913.....	533	106	75
September, 1914.....	323	70	62
	—	—	—
Total, 1913.....	1,652	265	201
Total, 1914.....	908	169	171

## VISITS OF THE SECRETARY.

The secretary made the following visits: July 3, Anderson; July 7, Vincennes; September 3, Kokomo; September 18, Elwood; September 23, Newport, Kentucky; September 24, Lafayette; September 27, New Castle.

*Anderson, July 3.*—This visit was made to meet with Mayor Mellett and city council and city board of health to discuss city health problems and conditions. An inspection of some streets, alleys and of the water supply was made, also a visit paid to the outdoor baby camp. Several suggestions were made to the authorities which if followed out will certainly mark an improvement in public health at Anderson.

*Vincennes, July 7.*—This visit was made to address a public meeting, also to inspect the work being done by the water laboratory at that city. The details of said work will be fully set forth in the report of the department. The Secretary found the in-

spectations were carefully and skilfully made and the water analyses performed with care. The inspectors had made their sanitary inspections with such tact that everywhere they were spoken of very highly.

From Vincennes I went to Columbus to attend the annual meeting of the Association of City Officials and to read a paper before them. My paper, which was entitled "The Reduction of Crime", was highly received and a vote of thanks was offered and was ordered printed in the proceedings.

From Columbus I went to Shelbyville to make an inspection of a schoolhouse in that city, concerning which we held a petition for inspection. Record of inspection has already been set forth and acted upon.

*Kokomo, September 3.*—On this date Kokomo held its annual exposition. By invitation, the exhibit of the State Board of Health was on display. A tent had been provided by the local authorities wherein illustrated lectures with moving pictures were given. We have since received a letter of thanks from the Merchants' Association of Kokomo on account of the participation of the State Board of Health in their annual trade celebration.

*Elwood, September 18.*—This visit was made upon invitation of the Woman's Civic Association to address a public meeting upon public health, and to make recommendations concerning Disease Prevention Day, October 2. A banquet was given which was attended by over 200 representative men and women of Elwood. I was the only speaker and presented an account of the work of the State Board of Health, also what hygiene could do, and thirdly, my suggestions for the celebration of Disease Prevention Day.

*Newport Kentucky, September 23.*—Upon invitation of the Kentucky State Medical Society, I visited Newport where the annual meeting of the state society was held. I was the guest of the society and my paper was entitled "Alcohol and the Public Health." I took the ground that alcohol used as a beverage was opposed to the public health. The paper was kindly received and a vote of thanks was given. The discussions to my surprise supported the contentions which were advanced. In the evening Dr. Victor C. Vaughan of Ann Arbor, Michigan, and myself addressed a public audience in the Methodist Church.

*Lafayette, September 24.*—This visit to Lafayette was to attend the annual meeting of the State Medical Society which lasted two days. The Secretary had no paper to read or report to make, but was on the program to take part in the discussion on Cerebro-

spinal Meningitis. The meeting was well attended and was a success in every way. A resolution was adopted endorsing the efforts of the State Board of Health to secure accurate vital statistics.

*Newcastle, September 27.*—An urgent telephone message from the health officer of Newcastle, Dr. W. I. Fugate, was received on Saturday, September 26th. Smallpox had broken out in Newcastle and there was a dispute among the doctors. Accordingly on September 27th I visited the city and while there was taken to see five cases of smallpox. One was quite severe, the other four were mild. The opposing doctors who claimed the mild cases were chickenpox were convinced and, all opposition being removed, the proper precautions against the spread of the disease were taken.

The correspondence has been exceedingly heavy during the quarter, but has all been attended to with more or less promptness. The summer vacations during the quarter of necessity interfered somewhat with the regular routine of the office, but no work was left undone finally on that account. Invitations are received daily requesting lectures and visits from the State Board of Health. Only a few of these invitations can be accepted, but they are certainly of great importance and the requests of the people should be attended to. This cannot be done until the Legislature will provide educated and trained assistants for the work. The Secretary and Assistant Secretary cannot accept one-half the invitations received.

#### VISITS MADE BY THE ASSISTANT SECRETARY FOR THE QUARTER ENDING SEPTEMBER 30, 1914.

Under instructions of the Board, I attended the annual meeting of the Association of State and National Food and Drug Officials at Portland, Maine, July 13th to 18th. H. E. Barnard, Pure Food and Drug Commissioner, also represented the State Board of Health at this meeting. The program was one of unusual excellence. Practically every State in the Union was represented at the meeting, and discussions along the lines of better sanitary food control were instructive and valuable.

*August 12* I visited Shelbyville to give an address in the Shelbyville Chautauqua Course on "The New Public Health."

*August 13* I went to Bloomington to make an inspection of the heating and ventilating plant installed in the school building at Smithville, and from Bloomington to Campbellsburg to make a



survey of a school site that had been condemned by Dr. Chas. W. Murphy, county health commissioner of Washington county. The trustee was proceeding to erect a new school building on this condemned site. Dr. Murphy was advised to bring suit through the prosecuting attorney for the enforcement of his condemnation order, and for an injunction to prevent the trustee from proceeding with the new building.

*August 18* to Pleasant Lake at the request of Dr. G. N. Lake, local health officer, to investigate an outbreak of typhoid, and to determine the source of the infection if possible. A survey was made of Pigeon Creek, which is the outlet of the Angola sewage disposal plant, a case survey of a number of typhoid cases was made, and a visit made to the dairy from which most of the milk supply of Pleasant Lake is obtained.

At the dairy it was found that the wife of the dairyman and one daughter had typhoid fever last year, while the dairyman himself had typhoid at the time of our visit. Sanitary conditions about the dairy were found to be bad in the extreme, with every indication that typhoid was being distributed through the milk supply from this dairy. A conference was held with the county health commissioner, Dr. Lane, of Angola, and the local health officer, and instructions given to supervise this dairy, to have water analyses made from at least a half dozen wells in the town, and to order a general cleaning up of alleys, privies, etc. Later investigations confirmed the dairy as being the source of the typhoid, and improvement of sanitary conditions at this dairy resulted in an almost immediate cessation of further spread of the infection.

*August 31* went to Bunker Hill and gave an address at the dedication ceremonies of the New Bunker Hill school building.

*September 15* went to Whitestown in response to a request of a number of patrons of the school at District No. 2, Worth township, which school had been condemned by the State Board. The patrons were requesting that the condemnation be removed and permission given to use the school building. On survey, it was found that the condemnation was entirely justified, and the trustee was notified that the condemnation would not be removed.

*September 21* I visited Brownstown and Vallonia to inspect the new school building at Vallonia, and the new heating and ventilating plant at the Brownstown school building. The trustee of the Vallonia school was ordered to install adjustable seats and desks, as the law requires and to fire-proof the storage room under the main entrance to the building. The National Heating and Ventilating

Company was ordered to install larger vault heaters in connection with the closet system at the Vallonia school. The heating and ventilating plant in the Brownstown school building was found to be satisfactory.

*September 25* went to Salem to testify in the case brought by county health commissioner, Dr. Murphy, against Trustee Rutherford, to enforce his order of condemnation on a schoolhouse site. This is the site that was visited in company with Dr. Murphy on August 14th. Testimony given was to the effect that said schoolhouse site was insanitary, did not comply with the rules of the State Board of Health, and could not be made sanitary or made to comply with said rules.

The above report was accepted and ordered spread of record.

#### INDIANAPOLIS SEWAGE DISPOSAL MATTER.

The authorities of Indiana were ordered, as appears of record in the last regular meeting, to report progress toward the efficient sewage disposal of the sewage of the city. The city engineer reported as follows:

DEPARTMENT OF THE CITY CIVIL ENGINEER,  
INDIANAPOLIS, October 9, 1914.

*Indiana State Board of Health, Indianapolis, Indiana:*

Gentlemen—The report of investigation of sewage disposal prior to January 5, 1914, is contained in the Twenty-third Annual Report of the Board of Public Works, for the year 1913, copy of which will be placed in your hands.

On account of leaks in Imhoff tank, work was delayed from January, 1914, until March 10th. On this date the work proper of the investigation was started, and has proceeded continuously, except for a day or two on two occasions, when the plant was shut down to repair pumps, until the present.

At this time, the task would be too great to tabulate the results obtained to date, but I can assure you that they are eminently satisfactory. The station is open, and has always been open to investigation, by the Indiana State Board of Health.

The first two or three months were required to develop the filters so that proper biological action could take place, after which the character of the effluents has been excellent, as shown by tests.

In an undertaking of such extensive character, approximating a cost of nearly \$2,000,000, it is impossible to rush forward, without definite information, to the last detail. However, the investigation is being pushed rapidly and vigorously, and I am confident that within a very few months the necessary data will all be at hand, and then the work of construction will begin as soon thereafter as may be possible.

For the information and satisfaction of any who may be interested, I suggest that you invite them to inspect, or employ experts to inspect, the work of this investigation, before any legal steps are taken against the city. I feel that such action will convince any one that the city is doing everything that can be asked to bring about a satisfactory solution of the sewage disposal problem.

Respectfully submitted,  
B. J. T. JEUP, City Civil Engineer.

#### SEWAGE DISPOSAL AT LEBANON.

The following local notices were received from the trustees of Center Township, Washington Township, Sugar Creek Township, Boone County:

*To the State Board of Health of the State of Indiana:*

The undersigned respectfully represents to said Board that he is the Township Trustee of Center Township, in Boone County, in the State of Indiana; that Prairie Creek runs into and through said township; that the City of Lebanon, in Boone County, Indiana, is discharging and is permitting to be discharged into said Prairie Creek the sewage from said city, and is thereby materially injuring, for domestic use, the character of the water in said Prairie Creek, to the injury of the public health and comfort.

The undersigned, therefore, respectfully prays said State Board of Health to forthwith inquire into and investigate the conditions herein complained of as provided in the act of the General Assembly of the State of Indiana, approved February 26, 1909, page 60.

JOHN L. SAUNDERS,

Trustee of Center Township, Boone County, Indiana.

Dated at Lebanon, Indiana, this 11th day of February, 1914.

*To the State Board of Health of the State of Indiana:*

The undersigned respectfully represents to said Board that he is the Township Trustee of Washington Township, in Boone County, in the State of Indiana, that Prairie Creek runs into and through said township; that the City of Lebanon, in Boone County, Indiana, is discharging and is permitting to be discharged into said Prairie Creek the sewage from said city, and is thereby materially injuring, for domestic use, the character of the water in said Prairie Creek, to the injury of the public health and comfort.

The undersigned, therefore, respectfully prays said State Board of Health to forthwith inquire into and investigate the conditions

herein complained of as provided in the act of the General Assembly of the State of Indiana, approved February 26, 1909, page 60.

JOSEPH D. LEWIS,

Trustee of Washington Township, Boone County, Indiana.

Dated at Thorntown, Indiana, this 10th day February, 1914.

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*To the State Board of Health of the State of Indiana:*

The undersigned respectfully represents to said Board that he is the Township Trustee of Sugar Creek Township, in Boone County, in the State of Indiana; that Prairie Creek runs into and through said township; that the City of Lebanon, in Boone County, Indiana, is discharging and is permitting to be discharged into said Prairie Creek the sewage from said city, and is thereby materially injuring, for domestic use, the character of the water in said Prairie Creek, to the injury of the public health and comfort.

The undersigned, therefore, respectfully prays said State Board of Health to forthwith inquire into and investigate the conditions herein complained of as provided in the act of the General Assembly of the State of Indiana, approved February 26, 1909, page 60.

JOHN N. MORRISON,

Trustee of Sugar Creek Township, Boone County, Indiana.

Dated at Thorntown, Indiana, this 11th day of February, 1914.

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As to what is meant by "domestic use", see: *Montrose Canal Co. vs. Loutsenhizer Ditch Co.*, 48 Pac. 532; 23 Col. 233; *Busby vs. Chesterfield Water Works and Gas Light Co.*, El. Bl. and El. 176-182.

Upon order of the State Health Commissioner, Mr. John C. Diggs, water chemist, made investigation and presented a full report. (See report of Water Laboratory in this report.)

After consideration of the engineer's report the following order was adopted:

OFFICIAL ORDER.

*To the Mayor and Common Council of the City of Lebanon, Boone County, Indiana:*

You are hereby notified that the Township Trustees of Center, Washington and Sugar Creek Townships of Boone County, in the State of Indiana, on the 11th day of February, 1914, made complaint in writing to the State Board of Health charging that the city of Lebanon, Indiana,

is discharging its sewage into Prairie Creek, and is thereby materially injuring the character of the water therein for domestic use, to the injury of the public health; that after an investigation of said charges, the State Board of Health, on the 9th day of October, 1914, made and entered of record a finding that said charges are true and an order that said city of Lebanon shall cease the pollution of the water in Prairie Creek by the discharge of its raw and unpurified sewage therein after the first day of June, 1915, and you are hereby requested to acknowledge the service of this notice and to make an order waiving a trial and hearing before the State Board of Health upon the finding and order of said Board.

Attest: .....

Secretary State Board of Health.

By order of the Common Council of the City of Lebanon, Indiana, the said city does hereby acknowledge the service of the above notice and does hereby waive its right to a trial and hearing before the State Board of Health upon the finding and order of said Board. This 9th day of November, 1914.

.....

Mayor of the City of Lebanon, Indiana.

Attest: .....

City Clerk of the City of Lebanon.

*Ordered:* That the following named members act as delegates to represent the State Board of Health at the annual meeting of the American Public Health Association, to be held November 30th to December 5th, at Jacksonville, Florida: Drs. Sutton, Boyers, Freeland, Hurty, the expenses of the above delegates to be paid from the general fund of the State Board of Health.

*Ordered:* Dr. Ada E. Schweitzer is appointed a delegate to represent the Pathological and Bacteriological Laboratory of the State Board of Health at the annual meeting of the American Public Health Association at Jacksonville, Florida, November 30th to December 5th, her expenses to be paid from the Laboratory Fund.

*Ordered:* Mr. H. E. Barnard shall be a delegate, with Mr. Harry Bishop alternate, to attend the annual meeting of the Association of Official Agricultural Chemists at Washington, November 16th to 18th, his expenses to be paid from the Pure Food and Drug Fund.

#### THE STATE FARM.

The trustees of the State Farm having requested the aid of the State Board of Health, a sanitary survey of the farm in Putnam County was made and reported as herewith appended:

## SANITARY SURVEY OF THE STATE FARM.

Location is in Putnam County, Indiana, on the National Road, about one-half mile west of Putnamville.

Area.—About 1,700 acres.

Character.—Partly valley or bottom land, bordering a small stream called Deer Creek, and partly rough and rolling. The entire area is underlaid with Mitchell limestone. The soil in the bottoms is of the usual kind found in such places and the hill-side and knoll-side soil, is well washed and poor.

Health.—The health of the people in this region has been and now is as good as the average for the State. The average death rate is low, being 10.8 for the last ten years.

Water Supply.—The domestic water supply of the present and past residents of this tract is taken from shallow wells and springs. Water from such sources is always under suspicion, and especially in area underlaid with limestone.

The analysis of one sample of water from a dug well 30 feet deep showed it to be polluted and impotable. Deep wells are not a success in this part of Putnam County, for the flow or amount of water is usually insufficient, and it is too heavily charged with mineral matter derived from the soluble limestone and other mineral substances in the ground.

Water carrying over 40 parts of solids per 100,000 is not desirable for drinking, and is very undesirable for bathing, laundry and steam making. The analysis of the water from one deep drilled well (220 feet deep) upon the farm showed it to be quite free from pollution and potable from the sanitary point. It was heavy in mineral matter and no good for bathing, laundry and steam making.

Deer Creek.—A small tributary of Big Walnut Creek, would furnish an ample water supply, which, if filtered, would be excellent for all purposes. Deer Creek is about fifteen miles long from above Putnamville, and a drainage basin with an average width of four miles. This gives approximately a water-shed of sixty square miles. The water-shed of the upper part of Deer Creek is rolling with hilly sections. The lower part is quite hilly with bottom land varying from one-fourth to one mile in width. Outcroppings of limestone frequently appear in the gullies and ravines. The region presents many sinkholes and small caves. The bottoms are a sandy loam, sometimes gravelly, and the hills and knolls are soiled with sandy clay.

When rains are heavy the water run-off is rapid, the stream frequently overflowing its banks. However, there is usually sufficient soil absorption to keep a flow in dry seasons. In many dry seasons, the flow is nil in some places.

Deer Creek will certainly give an abundant supply of water for 2,500 to 3,000 people. To use it as a source of supply, one or perhaps two dams will be necessary for impounding against dry weather. Of course, this impounded creek water should be purified. This could easily be done and thus a pure, soft and ample water supply be secured.

An analysis of a sample of water taken from Deer Creek shows it to be polluted and unfit for domestic use. As said, it can be easily and cheaply purified.

Sewage disposal on and for the State Farm would not be difficult nor very expensive, and could be so constructed as not in the least to threaten the water supply. The contour of the land from the drainage and sewerage point of view, is excellent. The elevation of the sites of the proposed buildings is at least thirty feet above Deer Creek, and sewage could therefore be rapidly flowed away. The contour also is favorable for the construction of a sewage disposal plant, which must be provided.

#### SUMMARY.

The State Farm and the region surrounding is healthful.

The contour of the land is favorable.

An ample and pure soft water supply is obtainable.

The natural conditions permit, at no great expense, the construction of an efficient sewer system, with purification plant, without endangering the water supply or otherwise threatening the health of the colony.

Respectfully submitted.

INDIANA STATE BOARD OF HEALTH.

Attest:..... Secretary.

October 27, 1914.

# **Statistical Report of Vital Statistics for 1914.**





## STATISTICAL REPORT, 1914.

This report is for the calendar year 1914. The populations are those of the United States census.

In the following tables the causes of death are arranged according to the International List of Causes of Death which has been adopted by all the registration States of the country. The International List of Causes of Death was used by the United States Bureau of the Census in its last statistical compilation of causes of death.

Table 1 is a classification of all deaths, with rates per 100,000 population, classified and arranged according to the International List of Causes of Death.

Table 2 is a classification of deaths from all causes by months, ages, color, nationality and conjugal condition.

Table 3 gives deaths from all causes by counties, months, ages, color, nationality and conjugal condition.

Table 4 gives deaths from certain diseases by geographical sections and by counties.

Table 5 gives death rates from certain important causes by counties in geographical sections.

Table 6 gives deaths from certain important causes by cities.

Table 7 gives death rates from certain important causes by cities.

Table 8 gives annual death rates for ten years, 1905 to 1914 inclusive, with average of cities of 5,000 population and over, compared with rural and state rates.

Table 9 gives deaths according to occupations by months and ages.

Table 10 gives deaths from tuberculosis (all forms) with rates per 100,000 population for certain occupations of each sex for the year 1914.

Table 11 gives deaths from poliomyelitis by counties, months, and ages for the year 1914.

Table 12 gives cases of diseases reported by counties.

Table A gives births by counties, sex, color, number of children born to each mother, and nationality of parents. (Stillbirths excluded.)

Table B gives births by counties, number of children born each month, grouped ages of parents.

Table C gives plural births, illegitimate and stillbirths.

Table D gives number of births and rate per 1,000 population, by counties for the year 1914.

Table E gives marriages by counties, months, color and nationality.

Table F gives marriages by counties and grouped ages.

#### BIRTHS.

The total number of births reported in the State of Indiana during the year 1914 was 61,889, of which number 32,018 were males, and 29,871 females. Of the total males, 31,443 were white and 575 colored. Of the total females, 29,333 were white and 538 colored. In the preceding year 59,180 births were reported, males 30,423, females 28,757. This shows an increase over the preceding year of 2,709. September had the largest number of births, 5,488, and April the lowest number, 4,623. March had the greatest number of deaths and June the lowest number. The birth (61,889) rate 22.1 exceeds the death (35,869) rate 12.8 per 1,000.

The nationality of parents appears as follows: American born fathers 54,385, American born mothers 55,607; foreign born fathers 6,485, foreign born mothers 5,686; nationality not reported fathers 451, mothers 28.

Of the total number of children born to each mother 17,877 were first, 13,786 second, 9,590 third, 6,682 fourth, 4,581 fifth, 3,169 sixth, 2,213 seventh, 1,608 eighth, 939 ninth, 587 tenth, 339 eleventh, 405 twelfth and over, 113 not reported.

As to ages of parents, 951 fathers and 6,669 mothers were under 20 years of age; 1,192 fathers and 8 mothers in the age period 50 to 60; 125 fathers in age period 60 to 70; 11 fathers in age period 70 to 80.

Two thousand one hundred eighteen stillbirths not included in total number of births and deaths.

The illegitimate births numbered 941, of which 494 were males and 453 females. The plural births numbered 569—599 males and 540 females. Of the plural births, three were triplets.

#### MARRIAGES.

Total marriages reported 28,978. This is a decrease of 577 as compared with the previous year. June had the greatest number

of marriages, 2,971; and March had the lowest number, 1,960. The general statistics on marriages will be found in tables E and F.

#### DEATHS.

Total number of deaths reported in 1914, 35,869; rate 12.8. In the preceding year 36,710 deaths; rate 13.2. Males numbered 19,217, females, 16,652. White males, 18,599; colored, 616; 1 Chinese, 1 Indian. White females, 16,172; colored, 480.

American born, 17,568 males; 15,435 females. Foreign born, 1,592 males; 1,203 females. Single males, 7,581; single females, 5,460. Married males, 8,249; married females, 6,193. Widowed or divorced males, 3,273; females, 4,976. Conjugal condition not reported, 114 males, 23 females.

The number of deaths with rates for 10 years appear in the following table:

Year.	Deaths.	Annual Rate.
1905.....	36,502	13.7
1906.....	35,992	13.5
1907.....	36,461	13.4
1908.....	36,224	13.2
1909.....	36,579	13.3
1910.....	36,513	13.5
1911.....	35,231	13.0
1912.....	35,771	13.1
1913.....	36,710	13.2
1914.....	35,869	12.8

Of the total number of deaths 5,452, or 15.1 per cent., occurred under one year of age. In the age period 1 to 4, 2,107 deaths occurred, making a total loss of children under 5 years of age of 7,559, or 21.0 per cent. of the total deaths, a decrease of 1.1 over the preceding year. This is 12.2 per cent. of the total births reported and shows a decrease from the preceding year of 1.4. In the age period 5 to 19 there were 2,140 deaths, or 5.9 per cent. of the total number, a decrease of 0.7 per cent. from the preceding year. The total loss under 20 years of age is 9,699 or 27.0 per cent. of the total deaths, a decrease of 1.7 per cent. from the preceding year.

In the age period of 20 to 49, practically the prime of life, there were 7,966 deaths, equal to 22.2 per cent. of the total, an increase of 0.1 per cent. over the preceding year.

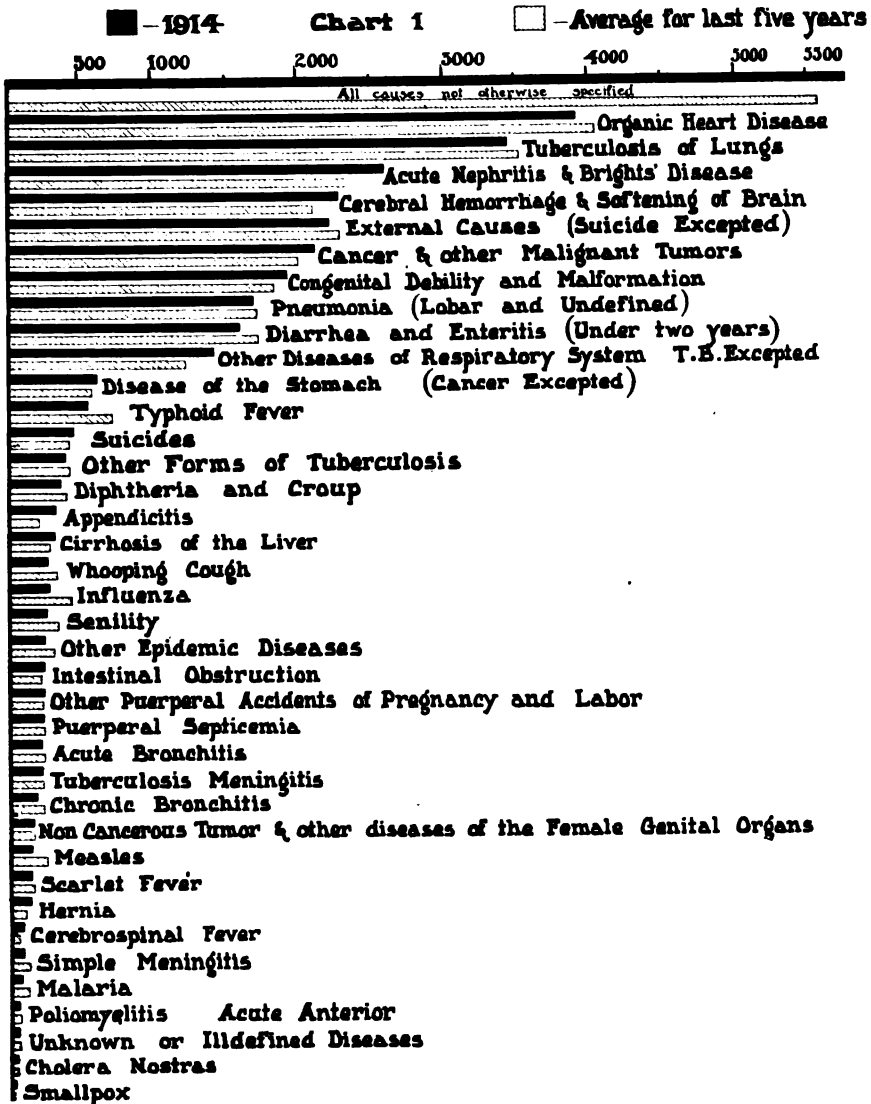
## DEATHS FROM ALL CAUSES (ABRIDGED) FOR THE PAST FIVE YEARS, WITH AVERAGES.

The following table gives the deaths from all causes for the past five years, with averages for each cause, and Chart No. 1 gives a graphic representation of deaths from all causes for 1914:

DEATHS FROM ALL CAUSES (Abridged).

	1910.	1911.	1912.	1913.	1914.	Average.
All causes not otherwise specified	5,568	5,445	5,665	5,653	5,813	5,629
Organic disease of the heart	3,856	3,972	4,419	3,998	3,915	4,052
Tuberculosis of the lung	3,921	3,588	3,419	3,446	3,471	3,569
Acute nephritis and Bright's disease	2,021	2,210	2,443	2,533	2,694	2,380
Cerebral hemorrhage and softening of the brain	1,859	2,087	2,111	2,224	2,321	2,140
Deaths by external causes (suicide excepted)	2,168	2,292	2,288	2,605	2,270	2,324
Cancer and other malignant tumors	1,872	1,919	2,018	2,226	2,193	2,045
Congenital debility and malformation	1,798	1,816	1,836	1,972	1,956	1,875
Pneumonia (lobar and undefined)	1,823	1,710	1,746	1,679	1,718	1,735
Diarrhoea and enteritis (under two years)	2,019	1,629	1,625	1,832	1,627	1,752
Other diseases of the respiratory system (tuberculosis excepted)	1,188	1,180	1,388	1,246	1,425	1,285
Disease of the stomach (cancer excepted)	647	579	658	680	649	622
Typhoid fever	934	736	652	701	591	723
Suicides	386	445	458	441	478	441
Other forms of tuberculosis	534	438	430	444	404	450
Diphtheria and croup	381	374	518	516	385	435
Appendicitis	272	282	316	294	333	291
Cirrhosis of the liver	283	329	309	296	328	301
Whooping cough	459	320	255	363	295	338
Influenza	701	659	420	406	292	495
Senility	515	409	385	370	286	393
Other epidemic diseases	453	291	283	249	267	308
Intestinal obstruction	236	249	264	225	248	244
Other puerperal accidents of pregnancy and labor	221	200	219	217	237	218
Puerperal septicemia	229	239	231	205	220	224
Acute bronchitis	247	210	246	217	211	226
Tuberculosis meningitis	255	204	199	218	202	215
Chronic bronchitis	217	210	232	227	197	216
Noncancerous tumor and other diseases of the female genital organs	173	199	150	189	174	177
Measles	462	280	73	461	151	285
Scarlet fever	205	179	113	199	114	162
Hernia	75	93	81	95	109	90
Cerebrospinal fever	22	26	36	27	81	38
Simple meningitis	130	123	82	95	81	102
Malaria	151	124	98	71	66	102
Polioomyelitis (acute anterior)	53	68	47	38	27	46
Unknown or illdefined diseases	81	68	31	33	22	47
Cholera nostras	20	12	15	8	10	13
Smallpox	1	3	12	11	8	7
Total deaths from all causes	36,513	35,231	35,771	36,710	35,869	36,018

# INDIANA DEATHS FROM ALL CAUSES



# TUBERCULOSIS.

*Harot Wrought by Tuberculosis in Indians in 1905-06-07-08-09-10-11-12-13-14.*

YEARS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914
Total deaths.....	4,492	4,465	4,471	4,527	4,479	4,710	4,230	4,048	4,108	4,077
Male deaths.....	1,745	1,675	1,964	2,085	2,112	2,191	2,032	1,910	2,018	2,001
Female deaths.....	2,793	2,771	2,328	2,442	2,367	2,519	2,198	2,138	2,090	2,076
Mothers, age 18 to 40, prime of life.....	987	917	826	875	1,286	1,412	1,212	1,168	1,101	1,201
Fathers, age 18 to 40, prime of life.....	316	255	343	383	995	1,040	970	923	944	1,086
Orphans made under 12 years of age.....	2,694	2,353	2,340	2,407	2,375	2,490	2,041	2,001	2,046	2,009
Homes invaded.....	3,307	3,283	3,849	4,022	3,866	3,909	3,716	3,500	3,611	3,450

## TUBERCULOSIS, ALL FORMS.

*Deaths by Months with Average for Past Ten Years.*

MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....	419	415	373	411	389	409	399	376	371	328	389
February.....	407	394	428	425	374	407	376	388	332	375	390
March.....	461	443	449	437	451	498	424	452	427	397	443
April.....	426	439	455	446	449	462	401	397	392	398	426
May.....	391	398	384	412	418	402	370	375	397	389	393
June.....	361	331	356	372	410	399	361	303	339	337	356
July.....	361	329	377	357	349	373	374	318	341	335	351
August.....	355	367	389	314	353	363	339	286	326	301	340
September.....	306	307	340	341	322	354	267	269	281	317	310
October.....	326	344	327	330	327	350	306	393	296	304	331
November.....	326	346	315	344	305	311	303	280	297	276	310
December.....	353	343	329	338	332	368	310	311	299	320	330
Totals.....	4,492	4,456	4,522	4,527	4,479	4,710	4,230	4,048	4,108	4,077	4,364

## TUBERCULOSIS, ALL FORMS.

*Deaths by Ages with Average for Past Ten Years.*

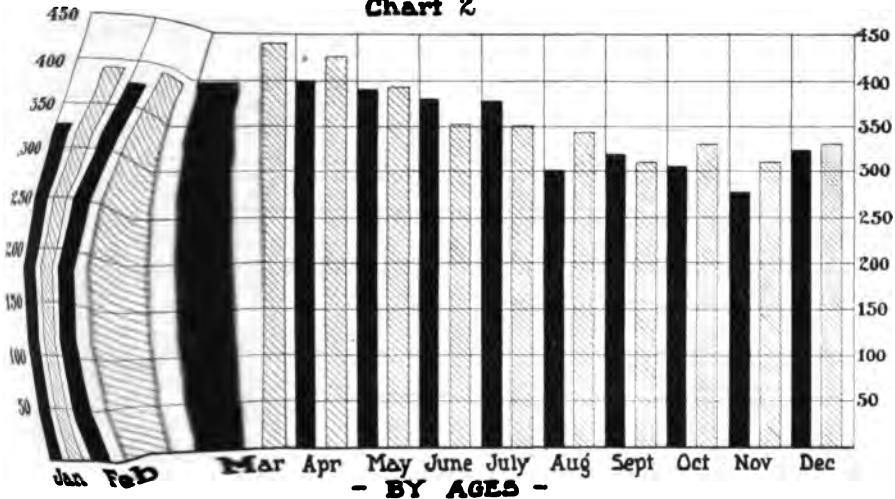
AGES.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
Under 1 year.....	108	126	132	152	179	184	139	143	133	104	140
1 to 2 years.....	35	62	85	36	87	102	72	79	88	70	71
2 to 3 years.....	26	38	48	30	36	39	33	46	27	46	36
3 to 4 years.....	18	31	24	21	24	29	25	35	26	26	25
4 to 5 years.....	11	24	28	15	15	22	11	14	22	15	17
5 to 9 years.....	63	64	58	55	67	60	64	67	82	61	64
10 to 14 years.....	97	106	93	100	93	92	91	89	83	72	90
15 to 19 years.....	449	411	400	400	373	370	339	267	293	261	356
20 to 24 years.....	697	691	667	609	575	653	529	511	479	487	588
25 to 29 years.....	574	577	573	532	567	590	520	549	485	489	545
30 to 34 years.....	464	464	467	432	410	494	415	410	433	467	444
35 to 39 years.....	419	375	341	356	355	350	379	340	355	335	360
40 to 44 years.....	273	242	253	312	312	300	317	283	282	290	286
45 to 49 years.....	245	260	270	259	290	238	216	204	231	235	244
50 to 54 years.....	222	221	226	227	217	276	244	211	239	246	232
55 to 59 years.....	153	171	190	225	198	213	191	171	193	221	192
60 to 64 years.....	145	170	179	200	203	195	176	167	189	171	181
65 to 69 years.....	165	172	180	202	165	188	186	193	163	196	181
70 to 74 years.....	122	122	138	162	135	161	151	141	162	150	143
75 to 79 years.....	72	96	104	92	112	98	89	82	103	81	93
80 to 89 years.....	34	35	48	48	56	54	49	52	45	45	46
90 years and over.....		4	3	5	10	7	4	4	4	9	5

# INDIANA TUBERCULOSIS ALL FORMS

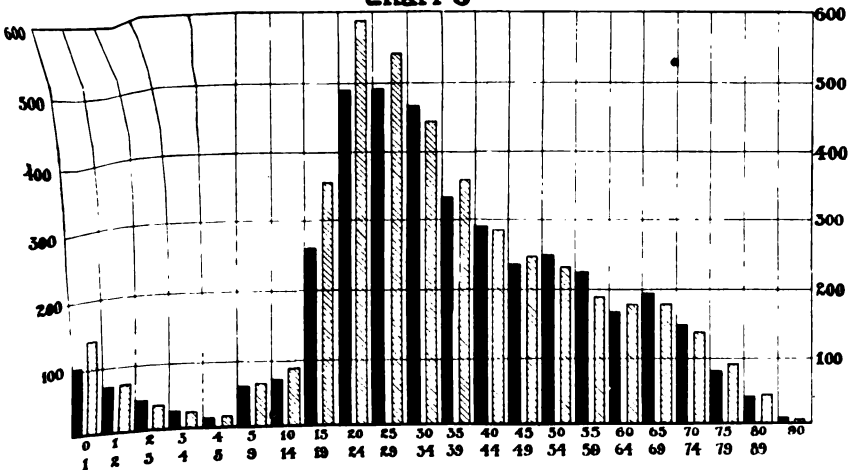
■ - 1914

BY MONTHS  
Chart 2

▨ - Average for last ten years



- BY AGES -  
Chart 3





## PULMONARY TUBERCULOSIS.

*Deaths by Months with Average for Past Ten Years.*

MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Aver- age.
January.....	395	359	330	358	334	357	340	318	323	289	340
February.....	379	349	392	263	310	340	320	333	289	340	341
March.....	421	391	396	390	385	420	369	385	372	339	385
April.....	380	380	392	379	366	378	331	321	349	342	362
May.....	346	337	329	347	347	324	306	322	325	323	330
June.....	330	282	303	318	330	322	310	252	288	292	302
July.....	310	285	314	290	276	291	300	270	283	283	290
August.....	308	312	312	257	295	278	283	244	274	254	281
September.....	263	253	286	278	253	281	208	196	232	259	250
October.....	266	289	276	275	273	294	244	234	235	251	263
November.....	287	302	276	293	253	254	256	226	243	234	262
December.....	313	310	282	287	287	304	258	263	260	265	282
Totals.....	3,998	3,854	3,888	3,825	3,706	3,853	3,525	3,364	3,446	3,471	3,693

## PULMONARY TUBERCULOSIS.

*Deaths by Ages with Average for Past Ten Years.*

AGEs.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Aver- age.
Under 1 year.....	53	60	63	78	48	63	52	53	55	45	57
1 to 2 years.....	37	27	31	27	30	33	22	32	34	15	28
2 to 3 years.....	13	19	19	15	14	13	13	16	11	14	14
3 to 4 years.....	10	10	6	8	8	9	5	7	11	7	8
4 to 5 years.....	3	8	10	4	5	9	4	4	7	10	6
5 to 9 years.....	37	31	29	23	30	24	26	29	41	23	29
10 to 14 years.....	75	76	66	62	64	62	53	57	56	49	62
15 to 19 years.....	411	359	356	348	329	317	290	229	280	230	312
20 to 24 years.....	650	625	623	562	509	578	480	451	439	449	536
25 to 29 years.....	538	535	517	499	502	520	474	507	455	452	499
30 to 34 years.....	437	429	430	395	267	431	375	370	381	426	394
35 to 39 years.....	385	342	318	316	322	309	333	301	320	305	325
40 to 44 years.....	254	220	234	278	277	263	263	253	249	263	255
45 to 49 years.....	219	231	238	220	255	204	192	186	207	201	215
50 to 54 years.....	200	198	197	188	183	242	206	183	201	221	201
55 to 59 years.....	139	155	165	198	165	181	159	147	169	200	167
60 to 64 years.....	151	145	153	170	179	158	151	141	156	148	155
65 to 69 years.....	154	147	163	169	142	165	168	160	136	171	157
70 to 74 years.....	111	103	126	138	120	141	136	116	126	130	124
75 to 79 years.....	66	76	88	76	101	86	78	72	86	67	79
80 to 90 years.....	28	31	43	42	48	39	41	47	37	39	39
90 years and over.....	4	1	3	8	6	4	4	4	4	6	4

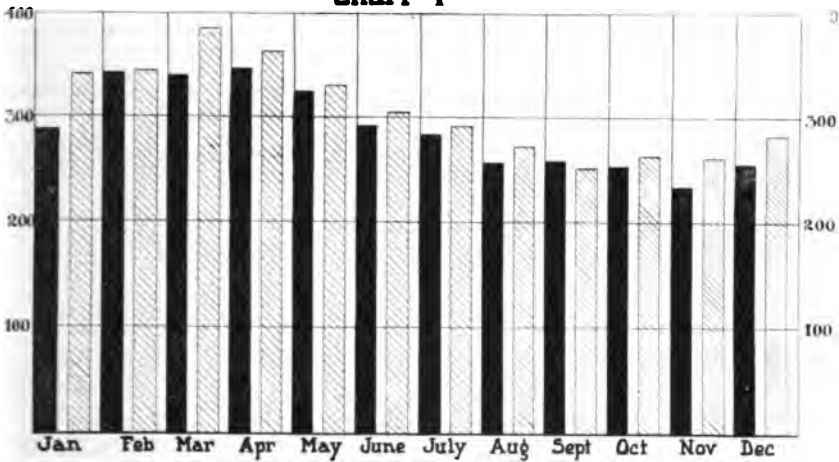
# INDIANA PULMONARY TUBERCULOSIS

■ - 1914

BY MONTHS

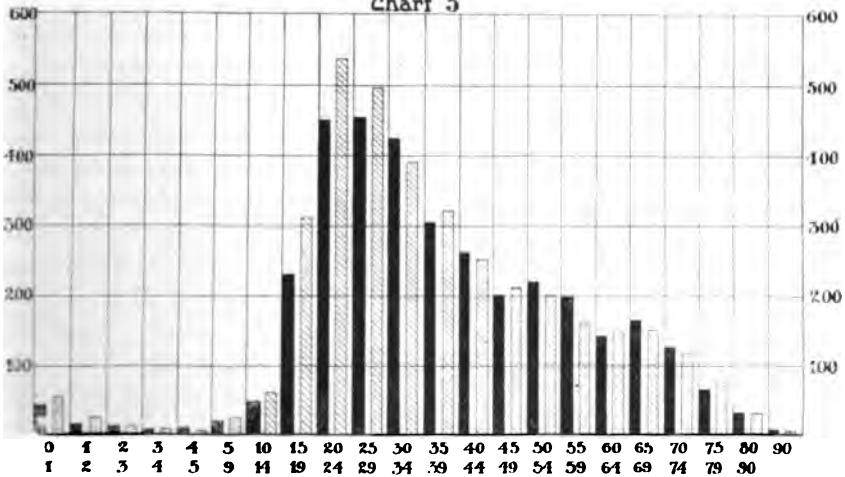
▨ - Average for last ten years

Chart 4



- BY AGES -

Chart 5



The following table of deaths by months for 1914 shows March had the greatest number of deaths, and June had the lowest number.

January .....	3,161	July .....	2,877
February .....	3,010	August .....	2,913
March .....	3,670	September .....	2,785
April .....	3,395	October .....	2,794
May .....	3,078	November .....	2,678
June .....	2,650	December .....	2,858

March, April and May had the most tuberculosis deaths.

January, February, March and April had the most pneumonia deaths.

July, August and September had the most deaths from diarrheal diseases.

September, October and November were highest in typhoid deaths.

TUBERCULOSIS DEATH RATES PER 100,000 BY COUNTIES FOR 1914 IN INDIANA.

State Rate .....	145.8
Northern Counties .....	103.2
Central Counties .....	164.8
Southern Counties .....	148.9

COUNTIES.	Tuberculosis. All Forms.	COUNTIES.	Tuberculosis. All Forms.
Adams .....	100.3	Harrison .....	123.6
Allen .....	86.8	Hendricks .....	139.2
Bartholomew .....	127.9	Henry .....	105.4
Benton .....	86.7	Howard .....	168.2
Blackford .....	99.7	Huntington .....	68.4
Boone .....	144.2	Jackson .....	226.6
Brown .....	125.4	Jasper .....	99.3
Carroll .....	89.0	Jay .....	123.7
Cass .....	153.2	Jefferson .....	219.7
Clark .....	198.3	Jennings .....	196.8
Clay .....	108.9	Johnson .....	131.5
Clinton .....	103.2	Knox .....	157.0
Crawford .....	207.5	Kosciusko .....	121.9
Daviess .....	165.9	Lagrange .....	52.8
Dearborn .....	161.9	Lake .....	127.1
Decatur .....	158.7	Laporte .....	111.3
Dekalb .....	91.0	Lawrence .....	224.5
Delaware .....	147.2	Madison .....	148.7
Dubois .....	105.9	Marion .....	224.8
Elkhart .....	71.3	Marshall .....	94.9
Fayette .....	149.8	Martin .....	159.3
Floyd .....	230.8	Miami .....	99.6
Fountain .....	106.0	Monroe .....	198.5
Franklin .....	169.7	Montgomery .....	122.8
Fulton .....	106.7	Morgan .....	130.9
Gibson .....	161.0	Newton .....	38.0
Grant .....	140.3	Noble .....	57.1
Greene .....	124.5	Ohio .....	69.3
Hamilton .....	125.5	Orange .....	179.3
Hancock .....	115.6	Owen .....	142.4

## TUBERCULOSIS DEATH RATES—Continued.

COUNTIES.	Tuberculosis, All Forms.	COUNTIES.	Tuberculosis, All Forms.
Parke .....	234.2	Sullivan .....	98.9
Perry .....	142.2	Switzerland .....	221.9
Pike .....	223.6	Tippecanoe .....	140.3
Porter .....	62.6	Tipton .....	170.9
Posey .....	137.7	Union .....	111.9
Pulaski .....	105.2	Vanderburgh .....	233.2
Putnam .....	184.9	Vermillion .....	180.5
Randolph .....	163.7	Vigo .....	170.4
Ripley .....	127.0	Wabash .....	59.3
Rush .....	185.0	Warren .....	55.1
Scott .....	194.8	Warwick .....	168.7
Shelby .....	160.1	Washington .....	143.4
Spencer .....	121.9	Wayne .....	121.8
Starke .....	56.6	Wells .....	110.8
Steuben .....	62.4	White .....	85.1
St. Joseph .....	114.2	Whitley .....	117.4

## MONTHLY ANALYSIS OF TUBERCULOSIS.

(As published in Monthly Bulletin.)

January, 1914.—Total number of tuberculosis deaths 319, of which 280 were of the pulmonary form and 39 other forms. The male tuberculosis deaths numbered 149; females, 170. Of the male deaths, 20 were in the age period of 18 to 40 and left 40 orphans under 12 years of age. Of the females, 56 were in the same age period as above and left 112 orphans under 12 years of age. Total orphans under 12 years of age made in one month by this preventable disease, 152; number of homes invaded, 280.

February, 1914.—Total number of tuberculosis deaths 365, of which 322 were of the pulmonary form and 43 other forms. The male tuberculosis deaths numbered 182; females, 183. Of the males, 51 were married in the age period of 18 to 40 and left 120 orphans under 12 years of age. Of the females, 55 were in the same age period as above and left 110 orphans under 12 years of age. Total orphans under 12 years of age made in one month by this preventable disease, 212; number of homes invaded, 349.

March, 1914.—Total number of tuberculosis deaths 389, of which 330 were of the pulmonary form and 59 other forms. The male tuberculosis deaths numbered 199; females, 190. Of the male deaths, 33 were married and in the age period of 18 to 40 and left 66 orphans under 12 years of age. Of the females, 63 were married in the same age period as above and left 126 orphans under 12

years of age. Total orphans under 12 years of age made in one month by this preventable disease, 192. Number of homes invaded, 374.

April, 1914.—Total number of tuberculosis deaths 385, of which 325 were of the pulmonary form and 60 other forms. The male tuberculosis deaths numbered 195, females 190. Of the males, 30 were married in the age period 18 to 40 and left 60 orphans under 12 years of age. Of the females, 65 were married in the same age period and left 130 orphans under 12 years of age. Total orphans under 12 years of age made in one month by this preventable disease, 190. Number of homes invaded, 371.

May, 1914.—Total number of tuberculosis deaths 377, of which 209 were of the pulmonary form and 68 other forms. The male tuberculosis deaths numbered 199; females, 178. Of the males, 34 were married in the age period of 18 to 40 and left 68 orphans under 12 years of age. Of the females, 53 were married in same age period and left 106 orphans under 12 years of age. Total orphans under 12 years of age made in one month by this preventable disease, 174. Number of homes invaded, 363.

June, 1914.—Total number of tuberculosis deaths 327, of which 282 were pulmonary and 45 other forms. The male tuberculosis deaths numbered 165; females, 162. Of the males, 25 were married in the age period 18 to 40 and left 50 orphans under 12 years of age. Of the females, 51 were married in the same age period as above and left 102 orphans. Total orphans under 12 years of age made in one month by this preventable disease, 152. Number of homes invaded, 315.

July, 1914.—Total number of tuberculosis deaths 326, of which 271 were of the pulmonary form and 55 other forms. The male tuberculosis deaths numbered 150; females, 176. Of the males, 29 were married in the age period 18 to 40 and left 58 orphans under 12 years of age. Of the females, 60 were married in the same age period as above and left 120 orphans. Total orphans under 12 years of age made in one month by this preventable disease, 178. Number of homes invaded, 315.

August, 1914.—Total number of tuberculosis deaths 290, of which 250 were pulmonary form and 40 other forms. The male tuberculosis deaths numbered 136; females, 154. Of the male deaths, 20 were married in age period 18 to 40 and left 40 orphans under 12 years of age. Of the females, 60 were married in the same age period as above and left 120 orphans under 12 years of

age. Total orphans under 12 years of age made in one month by this preventable disease, 160. Number of homes invaded, 279.

September, 1914.—Total number of tuberculosis deaths 301, of which 251 were of the pulmonary form and 50 other forms. The male tuberculosis deaths numbered 142; females, 159. Of the males 25 were married in the age period 18 to 40 and left 50 orphans under 12 years of age. Of the females, 48 were married in the same age period as above and left 96 orphans. Total orphans under 12 years of age made in one month by this preventable disease, 146. Number of homes invaded, 291.

October, 1914.—Total number of tuberculosis deaths 291, of which 232 were of the pulmonary form, and 59 other forms. The male tuberculosis deaths numbered 145; females, 146. Of the males, 22 were married in the age period of 18 to 40 and left 44 orphans. Of the females, 46 were married in the same age period and left 90 orphans. Total orphans under 12 years of age made in one month by this preventable disease, 134. Number of homes invaded, 273.

November, 1914.—Total number of tuberculosis deaths 266, of which 234 were of pulmonary form and 32 other forms. The male tuberculosis deaths numbered 125; females, 141. Of the male deaths, 22 were married in the age period 18 to 40 and left 44 orphans under 12 years of age. Of the females, 45 were married in same age period as above, and left 90 orphans under 12 years of age. Total orphans under 12 years of age made in one month by this preventable disease, 134. Number of homes invaded, 255.

December, 1914.—Total number of tuberculosis deaths 306, of which 253 were of the pulmonary form and 53 other forms; 176 cases of pulmonary form reported. The male tuberculosis deaths numbered 148, females 158. Of the males, 27 were married in the age period 18 to 40 and left 54 orphans under 12 years of age. Of the females 35 were married in the same age period as above and left 70 orphans under 12 years of age. Total orphans under 12 years of age made in one month by this preventable disease, 124. Number of homes invaded, 293.

# MEASLES.

*Deaths by Months with Average for Past Ten Years.*

MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....		2	7	8	5	21	19	9	26	10	10
February.....	1	2	10	57	15	62	32	5	55	16	25
March.....			28	52	23	102	61	7	87	24	38
April.....	2	7	40	47	41	83	92	14	103	29	45
May.....		4	51	24	27	87	44	12	92	28	36
June.....	1	3	31	11	14	41	14	11	55	20	20
July.....			23	2	13	22	9	7	16	7	9
August.....	1	1	5	2	9	18	4	3	12	4	5
September.....			2	1	3	3	3	1	2	1	1
October.....			4	4		5	1		1	4	1
November.....	1	2	3		3	9		1	3	6	2
December.....		2	9	1	3	9	1	3	9	2	3
Totals.....	6	23	213	209	156	462	280	73	461	151	203

# MEASLES.

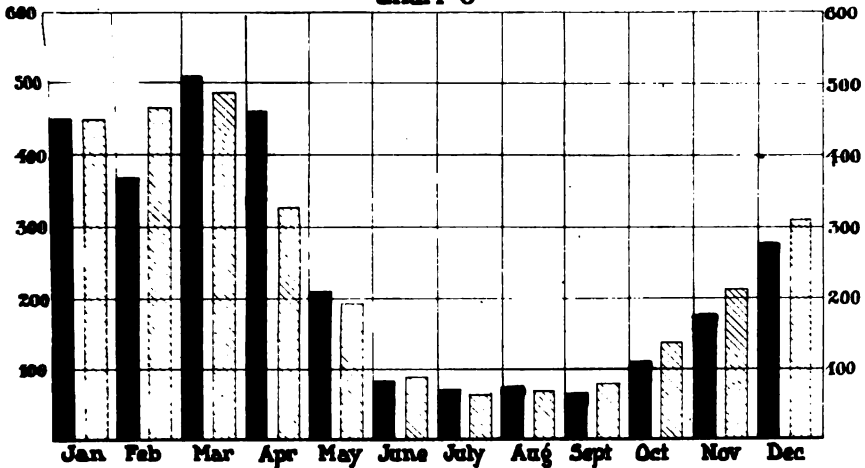
*Deaths by Ages with Average for Past Ten Years.*

AGES.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
Under 1 year.....	3	5	49	50	27	73	52	10	104	38	41
1 to 2 years.....		9	55	29	39	116	66	18	103	35	47
2 to 3 years.....	1	1	30	13	19	69	31	6	69	23	25
3 to 4 years.....			9	14	9	32	19	5	34	7	12
4 to 5 years.....		1	6	8	7	17	7	1	24	6	7
5 to 9 years.....		1	20	26	20	49	34	9	50	15	22
10 to 14 years.....			6	9	9	24	11	5	16	7	8
15 to 19 years.....		1	7	16	2	10	5	2	18	2	6
20 to 24 years.....		1	3	5	5	10	4	3	8	2	4
25 to 29 years.....		1	6	8	6	9	13	1	7	1	5
30 to 34 years.....		2	1	4	2	14	7	4	5	4	4
35 to 39 years.....		1	6	7	2	10	9	2	12	4	5
40 to 44 years.....			4	5	5	7	7	2	3	3	3
45 to 49 years.....			2	3	2	7	2	2	4	2	2
50 to 54 years.....	1		2	5	2	1			2	1	1
55 to 59 years.....						8	2	2	5		1
60 to 64 years.....			3			2	4		4		1
65 to 69 years.....			1	1		1	4		3		1
70 to 74 years.....				3		2	3				
75 to 79 years.....			2	1		2					
80 to 90 years.....			1					1		1	
90 years and over.....											

# INDIANA PNEUMONIA ALL FORMS

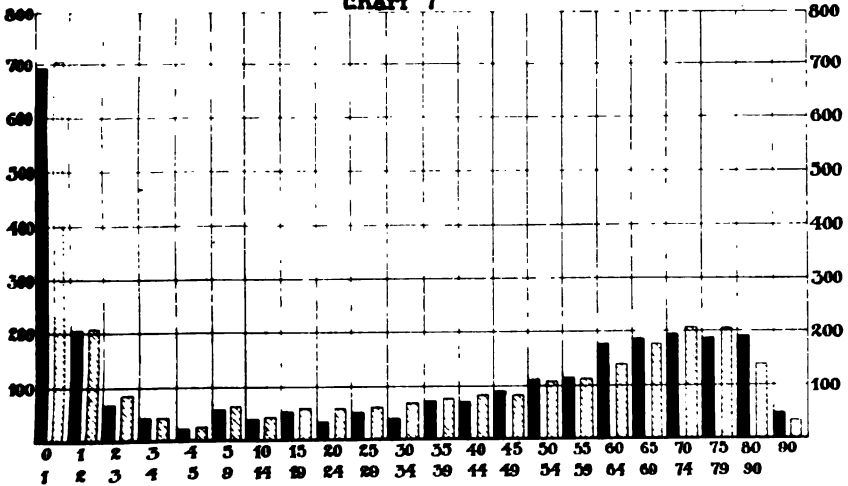
■ —1914      BY MONTHS      □ —Average for last ten years

Chart 6



BY AGES

Chart 7





## MONTHLY ANALYSIS OF PNEUMONIA DEATHS.

(As published in Monthly Bulletin.)

January, 1914.—Total deaths 405; rate 170.5 per one hundred thousand. In the preceding month, 288 deaths; rate, 101.1. In the same month last year, 430 deaths; rate, 183.6. Of the deaths reported this month, 91 were under one year of age; 43 in the age period of 1 to 4; 10 in the age period 5 to 9; 100 in the age period 10 to 60 and the remainder were in the age period of 60 and over.

February, 1914.—Total deaths, 356; rate, 165.9 per 100,000. In the preceding month, 405 deaths; rate, 170.5. In the same month last year, 389 deaths; rate, 183.9. Of the deaths reported this month, 88 were under one year of age; 59 in the age period 1 to 4; 8 in age period 5 to 9, and 81 in the age period 10 to 60. The remainder were in the age period of 60 and over.

March, 1914.—Total deaths, 482; rate, 202.9 per one hundred thousand. In the preceding month, 356 deaths; rate, 165.9. In the same month last year, 444 deaths; rate, 189.6.

April, 1914.—Total pneumonia deaths, 444; rate, 193.2 per 100,000. In the preceding month, 482 deaths; rate, 202.9. In the same month last year, 265 deaths; rate, 116.4. Of the deaths reported this month 131 were under 1 year of age, 60 in the age period 1 to 4, 9 in age period 5 to 9, 95 in age period 10 to 60, and the remainder were in the age period of 60 and over.

May, 1914.—Total pneumonia deaths, 170; rate, 71.5 per 100,000. In the preceding month, 444 deaths; rate, 193.2. In the same month last year, 182 deaths; rate, 77.3. Of the deaths reported this month, 56 were under one year of age, 23 in age period 1 to 9, 42 in age period 10 to 60, and the remainder in age period of 60 and over.

June, 1914.—Total pneumonia deaths, 82; rate, 35.6. In the preceding month, 170 deaths; rate, 71.5. In the same month last year, 83 deaths; rate, 36.4. Of the pneumonia deaths during June, 15 were under 1 year of age, 13 in the age period of 1 to 4, and 22 were 60 and over. Two pneumonia deaths were in the age period 90 to 99, one male and one female. One pneumonia death was over 100, and was a male.

July, 1914.—Total pneumonia deaths, 63; rate, 26.5. In the preceding month, 82 deaths; rate, 35.6. In the same month last year, 80 deaths; rate, 34.0. In July the male deaths numbered 37; females, 26. Twenty-eight children under 5 years of age died

from pneumonia this month and 2 males in age period 90 to 99 died from same cause.

August, 1914.—Total pneumonia deaths, 68; rate, 28.6 per 100,000. In the preceding month, 63 deaths; rate, 26.5. In the same month last year, 54 deaths; rate, 22.9.

September, 1914.—Total pneumonia deaths, 58; rate, 25.2. In the preceding month, 68 deaths; rate, 28.6. In the same month last year, 72 deaths; rate, 31.6. In September the male deaths numbered 35, females 23.

October, 1914.—Total pneumonia deaths, 84; rate, 35.3. In the preceding month, 58 deaths; rate, 25.2. In the same month last year, 121 deaths; rate, 51.4.

November, 1914.—Total pneumonia deaths, 165; rate, 71.8 per 100,000. In the preceding month, 84 deaths; rate, 35.3. In the same month last year, 185 deaths; rate, 81.2.

December, 1914.—Total pneumonia deaths, 275; rate, 115.8 per 100,000. In the preceding month, 165 deaths; rate, 71.8. In the same month last year, 238 deaths; rate, 101.1. Of the pneumonia deaths, 47 were under 5 years of age.

## TYPHOID FEVER.

*Deaths by Months with Average for Past Ten Years.*

MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....	50	39	72	50	40	55	44	29	27	38	44
February.....	35	29	57	49	21	33	42	42	27	39	37
March.....	34	40	48	49	38	36	36	42	27	44	39
April.....	26	32	38	38	34	36	47	33	28	38	35
May.....	33	39	42	32	36	28	31	35	33	22	33
June.....	43	29	30	32	37	28	28	30	26	32	31
July.....	57	52	58	63	80	45	78	33	48	37	55
August.....	121	96	145	93	119	126	109	70	116	69	106
September.....	203	155	141	121	144	128	91	102	97	71	125
October.....	154	168	133	150	162	168	99	109	125	78	144
November.....	101	148	85	121	110	126	77	81	90	78	101
December.....	65	86	75	87	54	65	54	46	57	45	63
Totals.....	928	913	933	885	875	934	736	652	701	591	814

## TYPHOID FEVER.

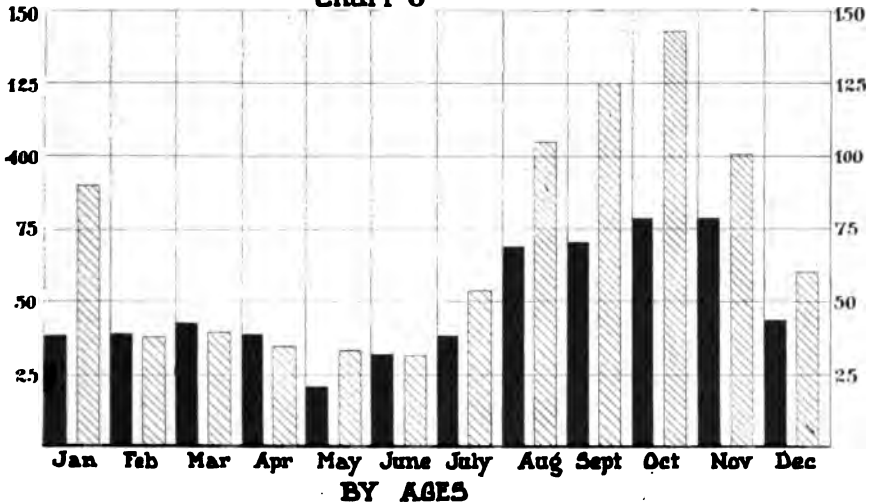
*Deaths by Ages with Average for Past Ten Years.*

AGES.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
Under 1 year.....	11	12	8	11	9	6	1	4	7	5	7
1 to 2 years.....	14	11	7	10	10	12	9	10	12	10	10
2 to 3 years.....	16	12	13	19	15	12	16	11	12	12	13
3 to 4 years.....	11	19	13	19	10	12	11	10	11	8	12
4 to 5 years.....	18	18	10	12	11	18	14	7	12	9	12
5 to 9 years.....	70	65	58	45	64	62	50	49	61	50	57
10 to 14 years.....	74	85	92	72	82	74	65	53	54	40	69
15 to 19 years.....	125	138	145	105	141	125	92	97	97	70	113
20 to 24 years.....	136	120	126	131	102	138	106	78	104	85	112
25 to 29 years.....	94	94	94	96	90	90	64	63	59	60	80
30 to 34 years.....	64	76	79	76	74	74	63	55	51	42	65
35 to 39 years.....	45	62	67	57	55	71	57	44	48	44	55
40 to 44 years.....	49	34	46	45	37	47	40	41	38	43	42
45 to 49 years.....	46	37	41	40	36	45	25	30	28	24	35
50 to 54 years.....	32	36	32	41	34	39	20	24	26	26	31
55 to 59 years.....	31	22	24	29	32	37	28	19	19	18	25
60 to 64 years.....	30	18	28	28	24	11	24	20	19	13	21
65 to 69 years.....	20	16	16	17	20	19	25	15	14	15	17
70 to 74 years.....	19	10	17	15	9	19	17	11	16	10	14
75 to 79 years.....	9	15	10	11	8	14	8	7	7	3	9
80 to 90 years.....	8	8	5	4	10	9	1	4	5	4	5
90 years and over.....				1	2				1		

# INDIANA TYPHOID FEVER DEATHS

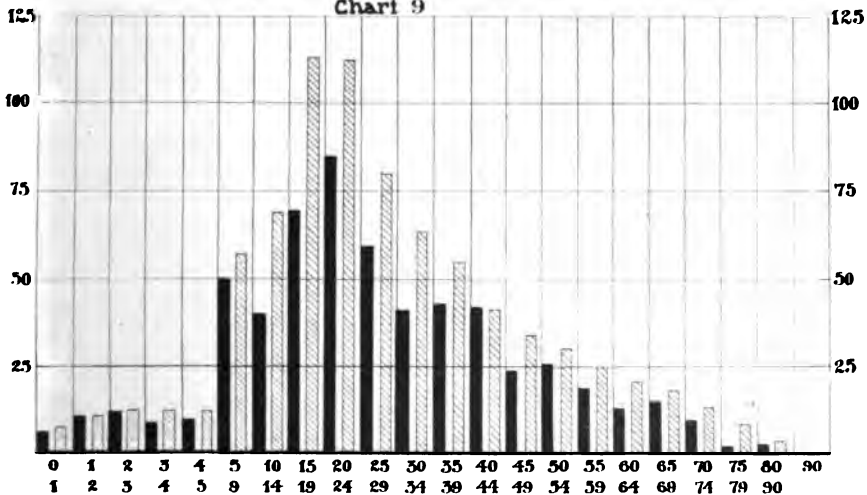
■ — 1914      BY MONTHS      ▨ — Average for last ten years

Chart 8



BY AGES

Chart 9



## DEATHS FROM TYPHOID FEVER FOR YEAR 1914.

*Total Number Deaths, and Death Rates per 100,000 Population.*

COUNTIES.	Total.	Male.	Female.	Rates.
<i>Northern Counties.....</i>	<i>200</i>	<i>118</i>	<i>82</i>	<i>29.5</i>
Adams.....	11	9	2	50.1
Allen.....	12	6	6	12.1
Benton.....	2	1	1	15.7
Blackford.....	2	1	1	12.4
Carroll.....	6	4	2	33.4
Cass.....	40	22	18	107.5
Dekalb.....	6	4	2	23.7
Elkhart.....	9	6	3	17.8
Fulton.....	1	1		5.9
Grant.....	6	2	4	11.5
Howard.....	11	8	3	31.3
Huntington.....	10	5	5	34.2
Jasper.....	1		1	7.6
Jay.....	3	3		11.9
Kosciusko.....	3	1	2	10.6
Lagrange.....	2	1	1	13.2
Lake.....	21	14	7	20.0
Laporte.....	5	2	3	10.4
Marshall.....	2	1	1	8.2
Miami.....	7	2	5	23.2
Newton.....	2	2		19.0
Noble.....				
Porter.....	2	1	1	9.6
Pulaski.....	5	2	3	37.5
Starke.....	1		1	9.4
Stauben.....	2		2	13.8
St. Joseph.....	22	16	6	23.9
Wabash.....	3	2	1	11.1
Wells.....	2	1	1	8.8
White.....	1	1		5.6
Whitley.....				
<i>Central Counties.....</i>	<i>219</i>	<i>124</i>	<i>95</i>	<i>19.0</i>
Bartholomew.....	7	3	4	27.9
Boone.....	3	1	2	12.0
Brown.....	1	1		12.5
Clay.....	4	3	1	12.1
Clinton.....	6	5	1	22.1
Decatur.....	5	3	2	26.4
Delaware.....	8	6	2	15.2
Fayette.....	1		1	6.8
Fountain.....				
Franklin.....	3	2	1	19.5
Hamilton.....	7	4	3	25.8
Hancock.....	5	3	2	26.2
Hendricks.....	4	4		19.2
Henry.....				
Johnson.....	4	2	2	19.4
Madison.....	11	5	6	16.6
Marion.....	71	37	34	25.0
Mourne.....	6	3	3	24.8
Montgomery.....	3	2	1	9.9
Morgan.....	3	2	1	14.0
Owen.....	5	2	3	35.5
Parke.....	8	5	3	36.0
Putnam.....	2	1	1	9.7
Randolph.....				
Rush.....	5	1	4	25.7

## DEATHS FROM TYPHOID FEVER FOR YEAR 1914—Continued.

COUNTIES.	Total.	Male.	Female.	Rates.
<i>Central Counties—Continued—</i>				
Shelby .....	5	2	3	18.1
Tippecanoe .....	8	6	2	19.6
Tipton .....	2	1	1	11.4
Union .....	1	1		15.9
Vermillion .....	1		1	5.0
Vigo .....	22	13	9	22.9
Warren .....	1	1		9.1
Wayne .....	7	5	2	15.4
<i>Southern Counties...</i>	<i>172</i>	<i>83</i>	<i>89</i>	<i>25.1</i>
Clark .....	5	1	4	16.5
Crawford .....	1	1		8.2
Davies .....	3	1	2	10.8
Dearborn .....	3	1	2	13.8
Dubois .....	9	3	6	45.3
Floyd .....	3	1	2	9.8
Gibson .....	11	6	5	36.3
Greene .....	9	8	1	22.8
Harrison .....	7	2	5	34.6
Jackson .....	8	3	5	32.3
Jefferson .....	7	5	2	34.1
Jennings .....	3	1	2	21.0
Knox .....	17	8	9	41.3
Lawrence .....	7	2	5	21.8
Martin .....	4	2	2	30.3
Ohio .....				
Orange .....	12	8	4	69.4
Perry .....	7	1	6	38.2
Pike .....	7	4	3	35.5
Posey .....	1		1	4.5
Ripley .....	8	4	4	40.6
Scott .....	2		2	22.9
Spencer .....	4	2	2	19.3
Sullivan .....	14	8	6	40.7
Switzerland .....	1		1	10.0
Vanderburgh .....	10	8	2	12.4
Warrick .....	7	2	5	31.5
Washington .....	2	1	1	11.4
<i>Urban .....</i>	<i>305</i>			<i>24.4</i>
<i>Rural .....</i>	<i>286</i>			<i>15.4</i>
<i>State .....</i>	<i>691</i>	<i>385</i>	<i>306</i>	<i>21.1</i>

## MONTHLY ANALYSIS FOR TYPHOID FEVER.

(As published in Monthly Bulletin.)

January, 1914.—One hundred forty-two cases in 40 counties, with 37 deaths. In the preceding month, 181 cases reported in 41 counties with 60 deaths. In the same month last year, 74 cases in 34 counties with 26 deaths.

February, 1914.—One hundred twenty-seven cases in 32 counties with 38 deaths. In the preceding month, 142 cases in 40 counties with 37 deaths. In the same month last year, 81 cases in 33 counties with 25 deaths.

March, 1914.—One hundred thirty-two cases reported in 37 counties with 45 deaths. In the preceding month, 127 cases in 32 counties with 38 deaths. In the same month last year, 53 cases in 19 counties with 27 deaths.

April, 1914.—Eighty-three cases in 26 counties with 33 deaths. In the preceding month, 132 cases in 37 counties with 38 deaths. In the same month last year, 117 cases in 37 counties with 27 deaths.

May, 1914.—Seventy-nine cases in 35 counties with 21 deaths. In the preceding month, 83 cases in 26 counties with 33 deaths. In the same month last year, 81 cases in 31 counties with 32 deaths.

June, 1914.—One hundred twenty-four cases in 30 counties with 31 deaths. In the preceding month, 79 cases in 35 counties with 21 deaths. In the same month last year, 96 cases in 35 counties with 25 deaths.

July, 1914.—One hundred ninety-three cases in 48 counties with 34 deaths. In the preceding month, 124 cases in 30 counties with 31 deaths. In the same month last year, 397 cases in 51 counties with 47 deaths.

August, 1914.—Three hundred ninety-two cases in 61 counties with 65 deaths. In the preceding month, 193 cases in 48 counties with 34 deaths. In the same month last year, 722 cases in 75 counties with 112 deaths.

September, 1914.—Three hundred twenty-three cases in 62 counties with 70 deaths. In the preceding month, 392 cases in 61 counties with 65 deaths. In the same month last year, 533 cases in 75 counties with 106 deaths.

October, 1914.—Four hundred fourteen cases in 69 counties with 75 deaths. In the preceding month, 323 cases in 62 counties with 70 deaths. In the same month last year, 486 cases in 69 counties with 126 deaths.

November, 1914.—Three hundred thirty-nine cases in 60 counties with 78 deaths. In the preceding month, 414 cases in 69 counties with 75 deaths. In the same month last year, 314 cases in 67 counties with 80 deaths.

December, 1914.—One hundred fifty-two cases in 43 counties with 41 deaths. In the preceding month, 339 cases in 60 counties with 78 deaths. In the same month last year, 181 cases in 41 counties with 60 deaths.



## DIPHTHERIA.

*Deaths by Months with Average for Past Ten Years.*

MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....	32	33	43	42	38	42	40	25	70	46	41
February.....	31	23	41	28	24	19	31	29	53	41	32
March.....	27	26	35	24	19	32	22	25	27	35	27
April.....	13	16	27	12	10	15	17	19	22	21	17
May.....	13	8	20	12	5	15	9	19	33	21	15
June.....	8	12	10	8	3	18	18	7	23	13	12
July.....	16	11	15	11	8	11	13	10	21	11	12
August.....	15	13	20	12	19	24	13	25	37	21	19
September.....	24	36	35	32	26	28	32	68	44	28	36
October.....	82	77	36	43	35	52	78	107	59	39	60
November.....	41	82	37	47	57	79	54	106	76	52	63
December.....	54	65	34	44	55	46	47	78	51	57	53
Totals.....	366	402	353	315	338	381	374	518	516	385	394

## DIPHTHERIA.

*Deaths by Ages with Average for Past Ten Years.*

AGES.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
Under 1 year.....	23	26	20	21	21	28	21	23	26	27	23
1 to 2 years.....	35	45	34	43	31	44	35	61	47	42	41
2 to 3 years.....	49	51	35	54	52	43	53	63	53	55	50
3 to 4 years.....	53	47	51	36	46	42	49	55	61	35	47
4 to 5 years.....	41	58	30	23	40	43	51	52	44	35	41
5 to 9 years.....	114	124	127	90	117	119	110	167	170	135	127
10 to 14 years.....	28	35	32	23	28	35	34	52	67	35	36
15 to 19 years.....	10	10	7	9	7	14	7	11	20	9	10
20 to 24 years.....	7	1	8	3	5	4	3	14	6	1	5
25 to 29 years.....	3		3	3		4	2	7	3	2	2
30 to 34 years.....	5		1	4	1	1	3	7	5	3	3
35 to 39 years.....	1	1	2	3	1	1	1	3	5	1	1
40 to 44 years.....		2				1		2	2		
45 to 49 years.....			1								
50 to 54 years.....		1				1			1	1	
55 to 59 years.....	2		1	1						1	
60 to 64 years.....				1		1			1		
65 to 69 years.....							2		1		
70 to 79 years.....								1	4	3	

# INDIANA

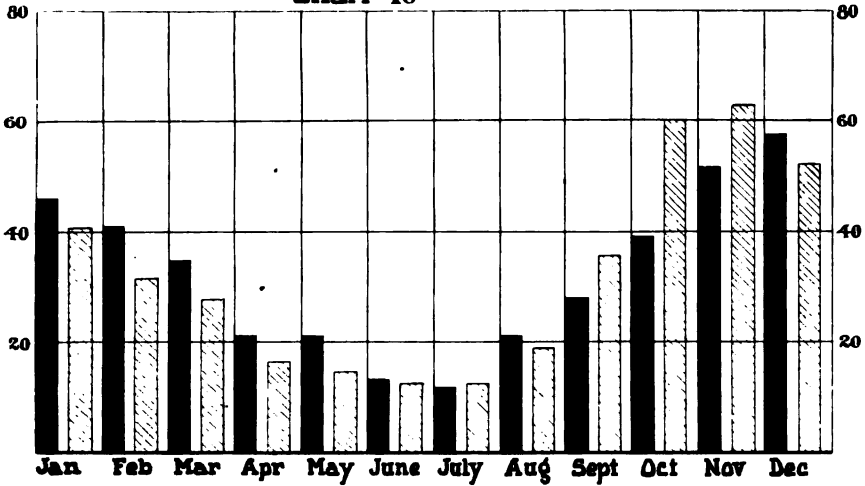
## DIPHTHERIA DEATHS

■—1914

▨—Average for last ten years

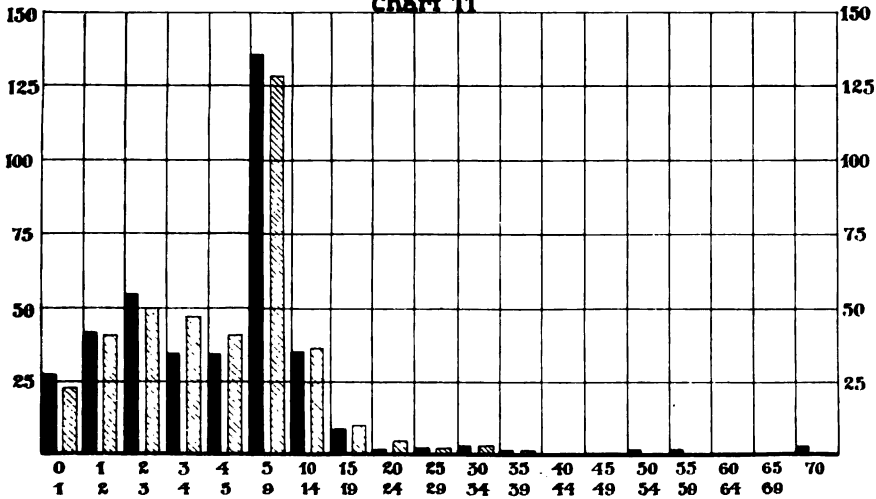
BY MONTHS

Chart 10



BY AGES

Chart 11



## MONTHLY ANALYSIS FOR DIPHTHERIA DEATHS.

(As published in Monthly Bulletin.)

January, 1914.—Four hundred nine cases in 65 counties with 42 deaths. In the preceding month, 487 cases in 47 counties with 50 deaths. In the same month last year, 428 cases in 62 counties with 66 deaths.

February, 1914.—Three hundred twelve cases in 56 counties with 39 deaths. In the preceding month, 409 cases in 65 counties with 42 deaths. In the same month last year, 332 cases in 61 counties with 48 deaths.

March, 1914.—One hundred eighty-six cases in 45 counties with 33 deaths. In the preceding month, 312 cases in 56 counties with 39 deaths. In the same month last year, 189 cases in 41 counties with 24 deaths.

April, 1914.—One hundred fifty-seven cases in 38 counties with 29 deaths. In the preceding month, 186 cases in 45 counties with 33 deaths. In the same month last year, 147 cases in 34 counties with 23 deaths.

May, 1914.—One hundred thirty-seven cases in 34 counties with 19 deaths. In the preceding month, 157 cases in 38 counties with 29 deaths. In the same month last year, 145 cases in 42 counties with 30 deaths.

June, 1914.—Eighty-two cases in 22 counties, with 13 deaths. In the preceding month, 137 cases in 34 counties with 19 deaths. In the same month last year, 126 cases in 35 counties with 21 deaths.

July, 1914.—One hundred nineteen cases in 29 counties with 10 deaths. In the preceding month, 82 cases in 22 counties with 13 deaths. In the same month last year, 126 cases in 33 counties with 20 deaths.

August, 1914.—One hundred forty-nine cases in 35 counties with 20 deaths. In the preceding month, 119 cases in 29 counties with 10 deaths. In the same month last year, 195 cases in 41 counties with 36 deaths.

September, 1914.—Two hundred forty cases in 47 counties with 28 deaths. In the preceding month, 149 cases in 35 counties with 20 deaths. In the same month last year, 387 cases in 56 counties with 45 deaths.

October, 1914.—Five hundred eighty-one cases reported in 54 counties with 39 deaths. In the preceding month, 240 cases in 47

counties with 28 deaths. In the same month last year, 727 cases in 60 counties, with 61 deaths.

November, 1914.—Five hundred twenty-one cases in 52 counties with 50 deaths. In the preceding month, 581 cases in 54 counties with 39 deaths. In the same month last year, 775 cases in 61 counties with 72 deaths.

December, 1914.—Four hundred thirty-six cases in 57 counties with 53 deaths. In the preceding month, 521 cases in 52 counties with 50 deaths. In the same month last year, 487 cases in 47 counties with 50 deaths.

## SCARLET FEVER.

*Deaths by Months with Average for Past Ten Years.*

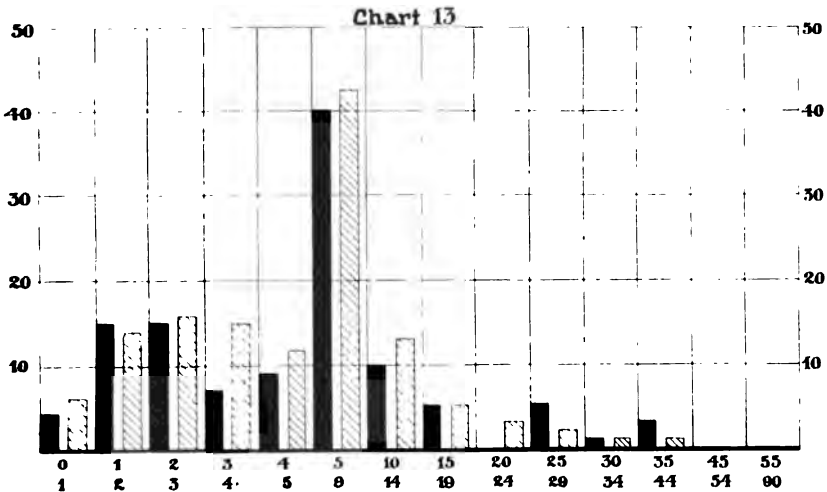
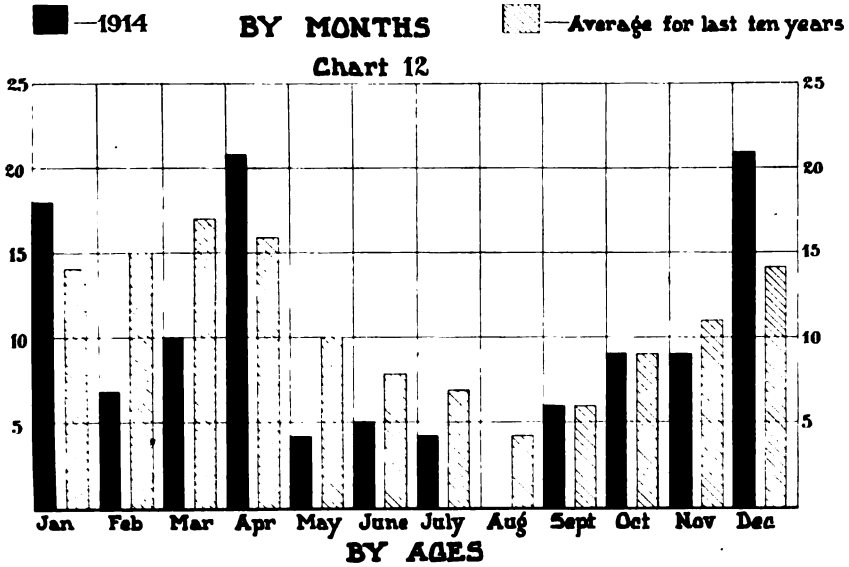
MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....	18	11	6	13	11	16	26	7	15	18	14
February.....	11	9	9	17	11	33	19	14	22	7	15
March.....	20	12	18	10	7	26	33	7	36	10	17
April.....	21	7	9	15	11	21	23	15	26	21	16
May.....	11	7	5	5	14	21	17	4	21	4	10
June.....	4	10	3	5	9	13	12	4	18	5	8
July.....	14	7	10	4	9	11	5	4	5	4	7
August.....	6	3	5	1	6	11	4	5	7	.....	4
September.....	5	6	3	6	8	8	10	5	8	6	6
October.....	5	8	7	4	21	11	7	10	13	9	9
November.....	11	14	8	5	19	21	5	14	13	9	11
December.....	7	7	7	10	25	13	11	24	15	21	14
Totals.....	133	101	91	94	151	205	179	113	199	114	137

## SCARLET FEVER.

*Deaths by Ages with Average for Past Ten Years.*

AGES.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
Under 1 year.....	10	5	4	4	9	13	7	5	7	4	6
1 to 2 years.....	18	13	7	8	22	24	13	14	12	15	14
2 to 3 years.....	20	10	15	17	15	21	24	12	19	15	16
3 to 4 years.....	17	15	13	12	20	23	14	16	21	7	15
4 to 5 years.....	14	10	7	10	15	19	16	10	13	9	12
5 to 9 years.....	38	27	31	22	53	61	66	29	68	40	43
10 to 14 years.....	11	8	8	9	11	20	18	11	29	10	13
15 to 19 years.....	1	2	5	5	3	10	10	5	13	5	5
20 to 24 years.....	1	10	.....	2	1	7	5	2	6	.....	3
25 to 29 years.....	2	.....	1	4	.....	4	2	6	5	5	2
30 to 34 years.....	.....	1	.....	2	1	.....	3	1	2	1	1
35 to 44 years.....	.....	.....	.....	.....	1	1	1	1	3	3	1
45 to 54 years.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
55 to 90 years.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....

# INDIANA SCARLET FEVER DEATHS



## DIARRHEAL DISEASES.

UNDER TWO YEARS OF AGE.

*Deaths by Months with Average for Past Ten Years.*

MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....	26	28	34	39	34	45	54	50	42	59	41
February.....	30	35	34	33	46	30	42	45	38	42	36
March.....	36	39	35	34	57	39	52	50	61	54	44
April.....	22	39	18	48	39	45	52	53	63	58	43
May.....	35	42	35	39	34	63	57	45	50	76	47
June.....	116	71	81	89	165	128	141	57	104	91	104
July.....	359	321	396	323	460	491	357	272	339	279	359
August.....	469	484	503	420	441	528	285	376	426	320	425
September.....	343	447	280	292	304	356	260	300	229	265	316
October.....	186	232	160	204	146	203	208	218	249	228	202
November.....	54	66	40	83	50	72	75	68	84	89	66
December.....	24	39	25	32	53	49	46	34	47	41	39
Totals.....	1,700	1,823	1,639	1,635	1,841	2,049	1,629	1,625	1,822	1,627	1,740

## DIARRHEAL DISEASES.

*Deaths by Months with Average for Past Ten Years, Two Years of Age and Over.*

MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....	32	26	40	38	30	36	20	25	22	33	30
February.....	29	36	33	26	28	20	27	34	19	22	27
March.....	42	35	41	35	37	28	29	35	28	24	33
April.....	27	41	38	28	22	24	32	27	18	29	28
May.....	28	30	29	43	38	29	23	29	25	21	29
June.....	44	29	63	57	46	34	35	29	48	29	41
July.....	86	78	150	116	35	99	66	66	76	63	83
August.....	152	119	203	165	105	146	70	112	108	84	126
September.....	94	120	122	143	76	83	51	102	68	61	93
October.....	67	92	62	88	34	62	48	56	51	41	60
November.....	28	39	42	50	35	28	31	30	31	30	34
December.....	28	40	24	28	27	31	40	21	15	23	27
Totals.....	658	695	847	817	563	620	492	566	506	460	622

# INDIANA DIARRHEAL DISEASES

Under two years of age

■ — 1914

BY MONTHS

▨ — Average for last ten years

Chart 14

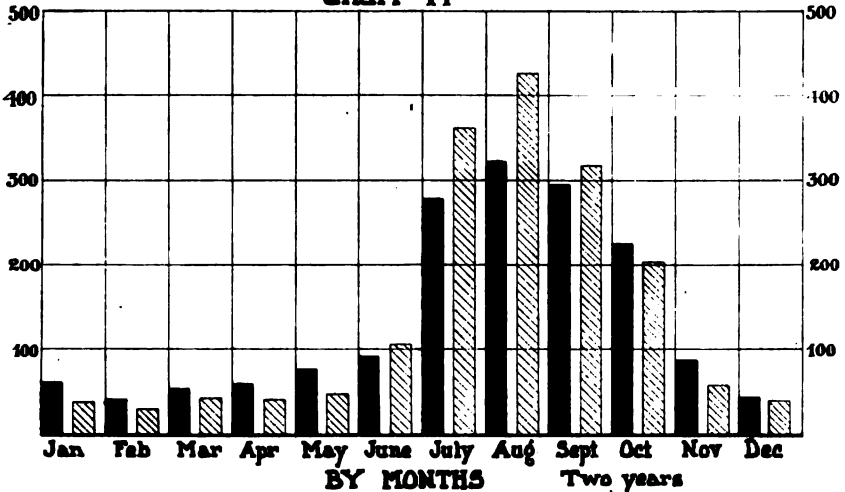
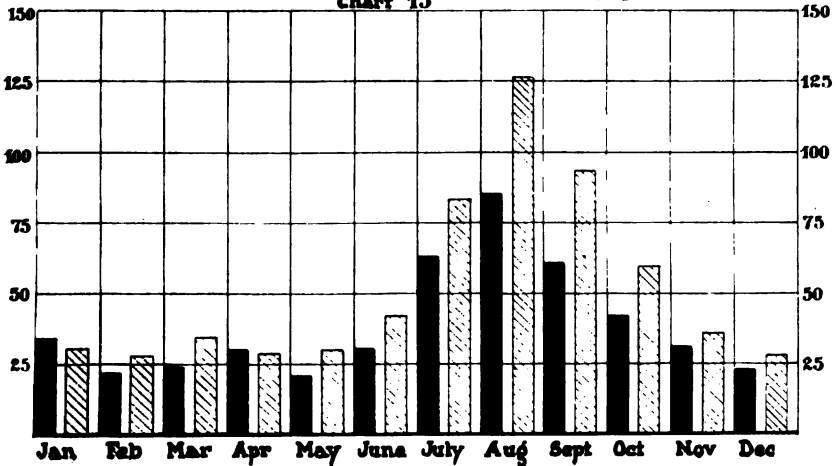


Chart 15





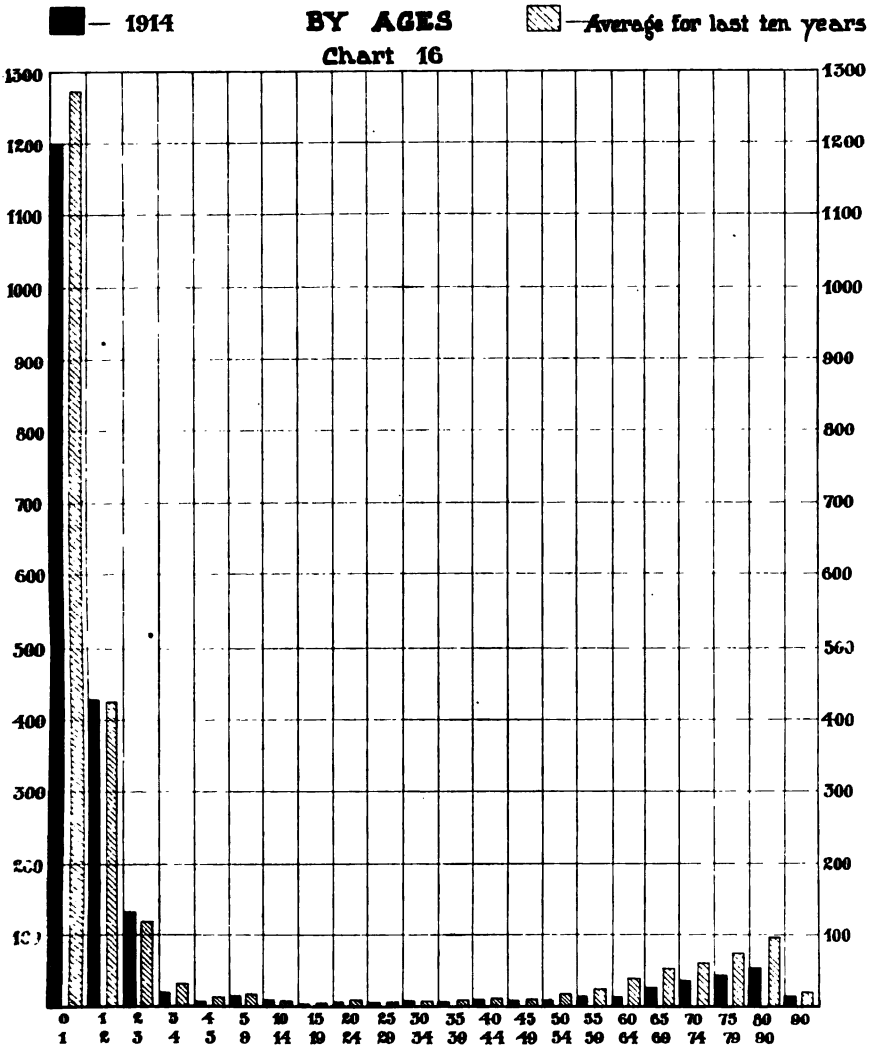
# DIARRHEAL DISEASE.

*Deaths by Ages, with Average for Past Ten Years.*

AGES.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
Under 1 year.....	1,115	1,240	1,202	1,202	1,340	1,576	1,260	1,219	1,437	1,200	1,279
1 to 2 years.....	406	417	437	433	501	473	389	406	385	427	426
2 to 3 years.....	130	116	105	126	125	140	82	134	100	133	119
3 to 4 years.....	36	31	33	34	25	37	22	28	38	20	30
4 to 5 years.....	13	20	11	16	18	13	13	12	18	6	14
5 to 9 years.....	29	17	19	16	19	22	23	19	18	17	19
10 to 14 years.....	10	6	12	6	7	9	4	11	6	10	8
15 to 19 years.....	8	8	4	3	5	9	4	2	8	2	5
20 to 24 years.....	17	12	16	14	8	8	9	10	8	6	10
25 to 29 years.....	16	21	7	14	11	3	6	7	7	6	9
30 to 34 years.....	10	10	10	11	14	7	11	11	7	10	10
35 to 39 years.....	22	17	20	13	11	10	13	6	15	9	13
40 to 44 years.....	20	19	13	12	20	11	11	9	12	15	14
45 to 49 years.....	13	14	13	19	17	15	14	19	7	11	14
50 to 54 years.....	25	30	30	20	20	19	19	14	18	10	21
55 to 59 years.....	51	37	35	46	19	16	21	25	16	19	28
60 to 64 years.....	72	59	61	45	42	37	34	27	25	16	41
65 to 69 years.....	68	90	78	78	98	50	37	38	32	25	59
70 to 74 years.....	93	99	97	81	92	61	45	54	38	32	69
75 to 79 years.....	95	107	117	103	132	66	43	62	43	42	81
80 to 90 years.....	104	124	141	132	148	66	71	62	83	58	98
90 years and over.....	13	18	20	22	33	17	10	16	8	13	17

# INDIANA

## DIARRRHEAL DISEASES



# INFLUENZA.

*Deaths by Months with Average for Past Ten Years.*

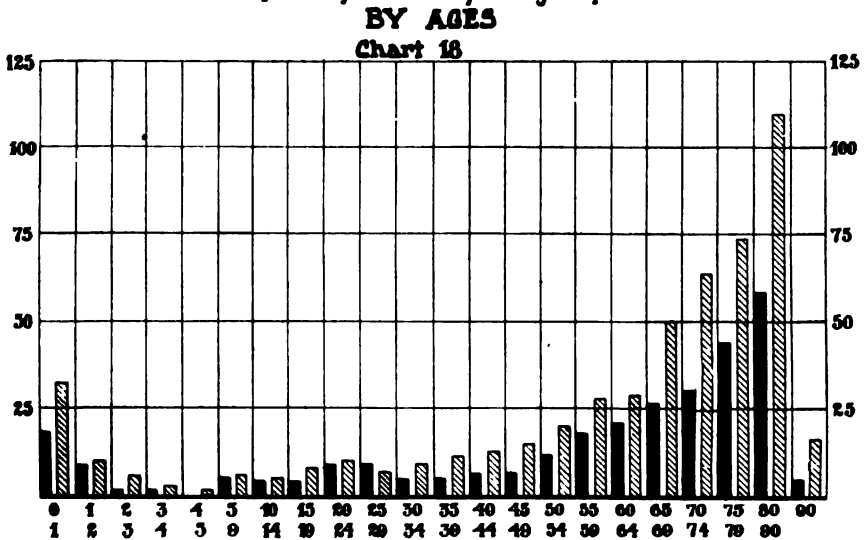
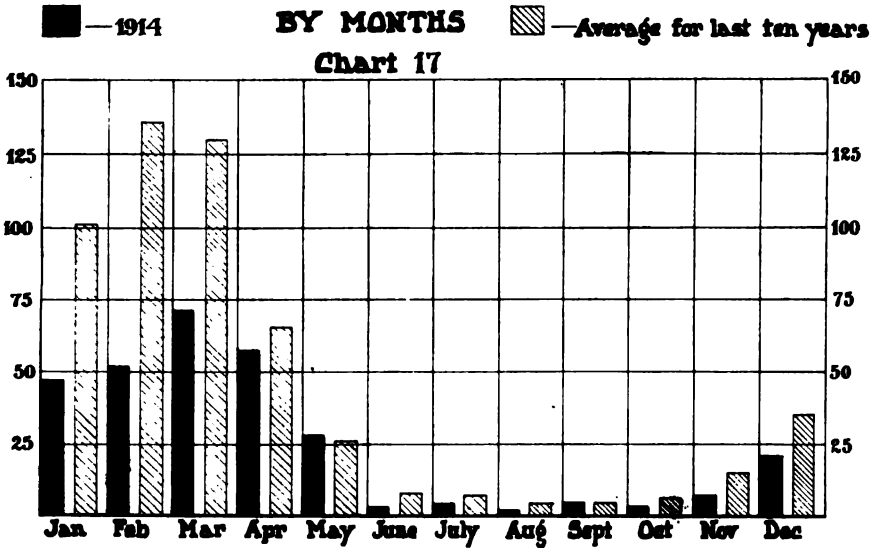
MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....	114	53	71	172	54	88	197	72	143	47	101
February.....	221	44	159	316	77	144	172	98	68	51	135
March.....	151	48	234	167	126	201	154	74	83	71	130
April.....	37	30	51	70	135	97	90	46	39	57	65
May.....	15	7	52	40	42	36	19	9	20	28	26
June.....	7	2	14	13	9	10	3	7	6	2	7
July.....	5	4	7	9	9	12	1	6	4	3	6
August.....		2	4	14	4	4	4	1	3	1	3
September.....	4	3	4	5	7	3		6	3	3	3
October.....	4	8	2	4	4	10	7	11	5	2	5
November.....	12	11	17	22	10	22	23	18	15	6	15
December.....	21	12	51	35	27	75	37	73	17	21	36
Total.....	591	224	666	867	504	701	659	420	406	292	533

# INFLUENZA.

*Deaths by Ages with Average for Past Ten Years.*

AGES.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
Under 1 year.....	43	14	26	32	44	46	42	33	21	19	32
1 to 2 years.....	10	3	12	11	11	18	15	10	10	9	10
2 to 3 years.....	6	5	5	10	5	14	8	7	8	1	6
3 to 4 years.....			3	6	4	3	7	2	1	1	2
4 to 5 years.....	1	2		1	2	4	2	4			1
5 to 9 years.....	5	2	4	10	2	9	10	9	5	5	6
10 to 14 years.....	4	3	6	10	9	6	4	3	4	4	5
15 to 19 years.....	7	4	11	16	7	9	15	7	4	4	8
20 to 24 years.....	16	3	11	13	6	14	16	8	7	9	10
25 to 29 years.....	3		5	11	9	16	8	7	5	9	7
30 to 34 years.....	9	2	18	15		16	18	7	5	4	9
35 to 39 years.....	9	4	14	24	9	15	22	9	6	4	11
40 to 44 years.....	16	3	9	21	10	22	17	8	13	5	12
45 to 49 years.....	14	10	23	30	8	23	22	7	5	5	14
50 to 54 years.....	17	13	26	37	14	26	23	22	14	11	20
55 to 59 years.....	32	6	38	34	35	38	36	14	25	18	27
60 to 64 years.....	40	11	24	50	29	34	41	24	19	21	29
65 to 69 years.....	47	24	73	96	46	69	59	45	34	26	50
70 to 74 years.....	67	31	94	115	52	87	74	34	48	30	63
75 to 79 years.....	86	31	89	131	80	96	72	52	64	44	74
80 to 89 years.....	132	43	151	182	103	122	130	85	84	58	109
90 years and over.....	23	8	23	21	15	19	18	23	21	5	17

# INDIANA INFLUENZA DEATHS



# MEASLES.

*Deaths by Months with Average for Past Ten Years.*

MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....		2	7	8	5	21	19	9	26	10	10
February.....	1	2	10	57	15	62	32	5	55	16	25
March.....			28	52	23	102	61	7	87	24	38
April.....	2	7	40	47	41	83	92	14	103	29	45
May.....		4	51	24	27	87	44	12	92	28	36
June.....	1	3	31	11	14	41	14	11	55	20	20
July.....			23	2	13	22	9	7	16	7	9
August.....	1	1	5	2	9	18	4	3	12	4	5
September.....			2	1	3	3	3	1	2	1	1
October.....			4	4		5	1		1	4	1
November.....	1	2	3		3	9		1	3	6	2
December.....		2	9	1	3	9	1	3	9	2	3
Totals.....	6	23	213	209	156	462	280	73	461	151	203

# MEASLES.

*Deaths by Ages with Average for Past Ten Years.*

AGES.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
Under 1 year.....	3	5	49	50	27	73	52	10	104	38	41
1 to 2 years.....		9	55	29	39	116	66	18	103	35	47
2 to 3 years.....	1	1	30	13	19	69	31	6	69	23	25
3 to 4 years.....			9	14	9	32	19	5	34	7	12
4 to 5 years.....		1	6	8	7	17	7	1	24	6	7
5 to 9 years.....		1	20	26	20	49	34	9	50	15	22
10 to 14 years.....			6	9	9	24	11	5	16	7	8
15 to 19 years.....		1	7	16	2	10	5	2	18	2	6
20 to 24 years.....		1	3	5	5	10	4	3	8	2	4
25 to 29 years.....		1	6	8	6	9	13	1	7	1	5
30 to 34 years.....		2	1	4	2	14	7	4	5	4	4
35 to 39 years.....		1	6	7	2	10	9	2	12	4	5
40 to 44 years.....			4	5	5	7	7	2	3	3	3
45 to 49 years.....			2	3	2	7	2	2	4	2	2
50 to 54 years.....	1		2	5	2	1			2	1	1
55 to 59 years.....						8	2	2	5		1
60 to 64 years.....			3			2	4		4		1
65 to 69 years.....			1	1		1	4		3		1
70 to 74 years.....				3		2	3				
75 to 79 years.....			2	1		2					
80 to 90 years.....			1					1		1	
90 years and over.....											

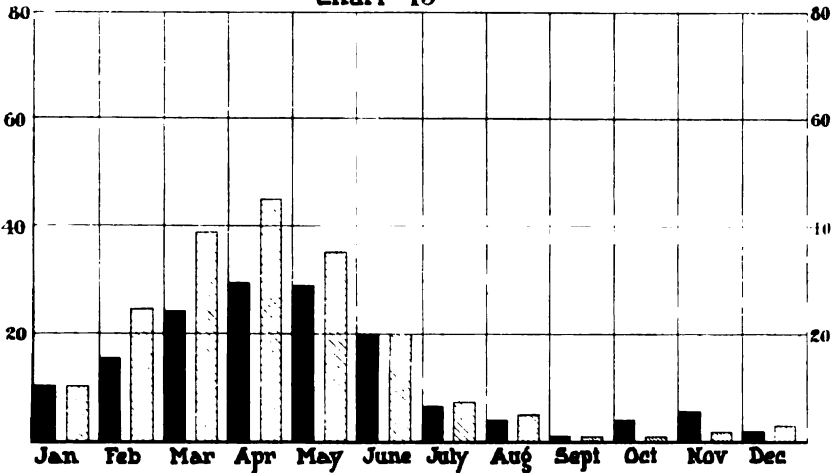
# INDIANA MEASLES DEATHS

■ — 1914

BY MONTHS

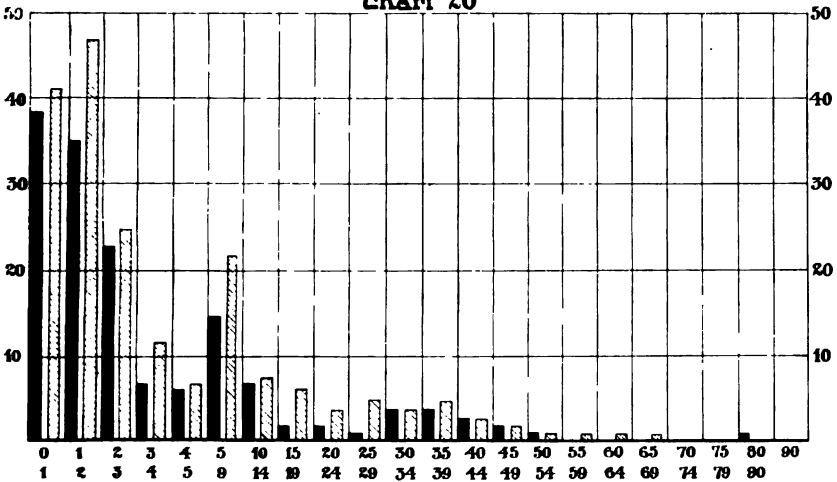
□ — Average for last ten years

Chart 19



BY AGES

Chart 20



# SMALLPOX.

Table Giving Number of Deaths by Months for the Past Ten Years.

MONTHS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Total.	Average.
January.....	7		3						1	1	12	1
February.....	11		2	1		1		2			17	1
March.....	3			2			2	3	1		11	1
April.....	3	1	1	2	1			2		1	11	1
May.....	3		1		3					1	8	
June.....	4		1	3			1	3	1	1	14	1
July.....	3	1			2				1		7	
August.....									1	1	2	
September.....		2									2	
October.....		3						1	3		7	
November.....					1				3	1	5	
December.....	1	1		2				1		2	7	
Totals.....	35	8	8	10	5	1	3	12	11	8	103	10

## MONTHLY ANALYSIS OF SMALLPOX DEATHS.

(As published in Monthly Bulletin.)

January, 1914.—Two hundred thirty-four cases in 26 counties with one death. The following counties reported smallpox present: Benton, 20 cases; Blackford, 2; Boone, 1; Carroll, 2; Cass, 1; Clark, 3; Clay, 5; Clinton, 4; Dubois, 2; Elkhart, 1; Floyd, 1 case and 1 death; Gibson, 9 cases; Grant, 3; Harrison, 1; Hendricks, 1; Jennings, 1; Madison, 1; Marion, 84; Martin, 2; Orange, 3; Spencer, 2; Steuben, 12; St. Joseph, 1; Tippecanoe, 2; Vanderburgh, 68; Washington, 2; Wayne, 1.

February, 1914.—Four hundred fifty-eight cases in 38 counties with no deaths. The following counties reported smallpox present: Benton, 6; Blackford, 11; Boone, 4; Carroll, 4; Cass, 3; Clark, 13; Clinton, 2; Crawford, 10; Decatur, 1; Dekalb, 1; Delaware, 12; Floyd, 69; Gibson, 17; Grant, 5; Greene, 1; Hancock, 2; Huntington, 10; Jennings, 1; Johnson, 3; Knox, 3; Lake, 5; Lawrence, 13; Madison, 3; Marion, 110; Martin, 40; Montgomery, 1; Morgan, 1; Orange, 3; Owen, 7; Posey, 64; Shelby, 9; Spencer, 1; Steuben, 8; Sullivan, 1; Vanderburgh, 2; Vigo, 6; Warrick, 2; White, 4.

March, 1914.—Six hundred eighty cases in 40 counties with no deaths. The following counties reported smallpox present: Benton, 5; Blackford, many; Brown, 10; Cass, 4; Clark, 12; Crawford, 4; Decatur, 1; Delaware, 12; Gibson, 11; Greene, 25; Hancock, 83; Harrison, 4; Hendricks, 1; Henry, 5; Howard, 1; Huntington, 11; Jay, 3; Jefferson, 3; Johnson, 3; Knox, 1; Kosciusko, 1; Lake, 1; Lawrence, 50; Madison, 1; Marion, 216; Montgomery, 1; Morgan,

1; Orange, 2; Parke, 6; Posey, 17; Rush, 7; Shelby, 54; Spencer, 41; Sullivan, 8; Tippecanoe, 2; Vanderburgh, 60; Vigo, 5; Wabash, 1; Washington, 2; Wayne, 1; Wells, 1.

April, 1914.—Four hundred forty-nine cases in 44 counties with 1 death. The following counties reported smallpox present: Allen, 26 cases; Blackford, 3; Brown, 4; Carroll, 2; Cass, 3; Clinton, 2; Crawford, 2; Decatur, 5; Delaware, 5; Floyd, 34; Fulton, 1; Gibson, 12; Greene, 2; Hamilton, 13; Hancock, 25; Henry, 6; Howard, 4; Jackson, 7; Jay, 4; Johnson, 9; Kosciusko, 10; Lake, 3; Lawrence, 6; Madison, 24; Marion, 53; Miami, 1; Orange, 2; Parke, 2; Pike, 1; Posey, 5; Pulaski, 1; Rush, 2; Shelby, 20; Spencer, 21; Sullivan, 17; Vanderburgh, 69; Vermillion, 1; Vigo, 8; Wabash, 31; Warren, 1; Washington, 4; Wayne, 2; Wells, 1; White, 4. The death occurred in Marion County.

May, 1914.—Four hundred twenty cases in 41 counties with 1 death. The following counties reported smallpox present: Adams, 3 cases; Blackford, 12; Brown, 6; Carroll, 1; Cass, 23; Clark, 13; Clay, 1; Clinton, 3; Daviess, 6; Decatur, 10; Delaware, 17; Floyd, 27; Fulton, 1; Gibson, 7; Grant, 3; Greene, 2 cases and 1 death; Hamilton, 10 cases; Hancock, 12; Henry, 18; Howard, 2; Jackson, 8; Jennings, 1; Johnson, 10; Knox, 8; Kosciusko, 17; Lawrence, 6; Madison, 26; Marion, 32; Montgomery, 2; Orange, 2; Parke, 4; Posey, 12; Rush, 3; Shelby, 5; Spencer, 2; Sullivan, 21; Vanderburgh, 62; Vermillion, 6; Vigo, 7; Wabash, 7; White, 2.

June, 1914.—Three hundred thirteen cases in 30 counties with 1 death in Hamilton County. The deceased was a male, age 85. The disease appeared in the following counties: Allen, 3 cases; Blackford, 11; Cass, 13; Clark, 8; Clinton, 38; Crawford, 6; Delaware, 8; Elkhart, 4; Floyd, 10; Fulton, 1; Gibson, 3; Hamilton, 5; Hancock, 1; Harrison, 3; Hendricks, 8; Howard, 7; Jackson, 21; Johnson, 19; Knox, 14; Lake, 1; Lawrence, 14; Madison, 16; Marion, 21; Noble, 3; Orange, 12; Shelby, 10; Spencer, 18; Vanderburgh, 10; Vermillion, 9; Vigo, 16. In June, 1913, 203 cases in 34 counties with 1 death.

July, 1914.—One hundred two cases in 20 counties with no deaths. The disease appeared in the following counties: Allen, 5 cases; Cass, 18; Clark, 2; Clinton, 1; Delaware, 10; Floyd, 3; Hamilton, 1; Hendricks, 4; Jay, 2; Johnson, 3; Knox, 6; Madison, 10; Marion, 7; Orange, 1; Shelby, 15; Sullivan, 1; Vanderburgh, 1; Vigo, 9; Wayne, 1; Wells, 2. In July, 1913, 110 cases in 22 counties with 1 death.



August, 1914.—Eighty-five cases in 19 counties with 1 death. The following counties reported smallpox present: Adams, 1 case; Cass, 1; Clark, 9; Delaware, 2; Floyd, 5; Fountain, 1; Franklin, 1; Jay, 3; Jefferson, 10; Johnson, 9 cases and one death; Knox, 16 cases; Madison, 2; Marion, 5; Newton, 1; Pike, 4; Shelby, 5; Steubenville, 1; Vanderburgh, 7; Vigo, 2.

September, 1914.—One hundred forty cases in 24 counties with no deaths. In the preceding month, 85 cases in 19 counties with one death. In the same month last year, 69 cases in 15 counties with no deaths. The disease appeared in the following counties: Adams, 2 cases; Allen, 1; Delaware, 1; Elkhart, 1; Floyd, 1; Fountain, 2; Franklin, 1; Gibson, 17; Henry, 1; Howard, 1; Jackson, 1; Jefferson, 25; Johnson, 5; Knox, 9; Lake, 3; Madison, 3; Noble, 30; Pike, 16; Shelby, 14; St. Joseph, 1; Tippecanoe, 2; Vanderburgh, 1; Vigo, 1; Washington, 1.

October, 1914.—Two hundred thirty-two cases in 23 counties with no deaths. In the preceding month, 140 cases in 24 counties with no deaths. In the same month last year, 126 cases in 21 counties with 4 deaths. The disease appeared this month in the following counties: Allen, 15 cases; Blackford, 15; Clark, 7; Clinton, 6; Delaware, 47; Floyd, 1; Fountain, 5; Gibson, 3; Hancock, 1; Harrison, 3; Howard, 1; Jefferson, 35; Johnson, 3; Knox, 17; Lake, 40; Marion, 1; Marshall, 1; Owen, 1; Parke, 1; Pike, 5; Porter, 22; Shelby, 1; Washington, 1.

November, 1914.—Six hundred thirty-seven cases in 24 counties with one death. The following counties reported smallpox present: Adams, 2 cases; Allen, 3; Blackford, 32; Clark, 11; Clay, 1; Clinton, 54; Delaware, 200 cases and 1 death; Dubois, 50 cases; Fountain, 20; Gibson, 1; Grant, 6; Hendricks, 13; Howard, 1; Jefferson, 18; Johnson, 10; Knox, 36; Lagrange, 3; Lake, 47; Madison, 13; Pike, 5; Porter, 2; Tippecanoe, 5; Tipton, 3; Vanderburgh, 1; Wells, many.

December, 1914.—Three hundred eighty-six cases in 37 counties with two deaths. The following counties reported smallpox present: Adams, 4; Blackford, 18 cases and 1 death; Boone, 9 cases; Clark, 13; Clinton, 26; Dekalb, 1; Delaware, 53; Dubois, 8; Elkhart, 2; Fayette, 10; Gibson, 3; Grant, 6; Henry, 1; Huntington, 4; Jackson, 3; Jay, 21; Jefferson, 32; Jennings, 1; Johnson, 5; Knox, 33; Lagrange, 20; Lake, 12; Madison, 14; Martin, 8; Montgomery, 5; Orange, 1; Porter, 1; Posey, 45; Randolph, 2; Scott, 4; Shelby, 2; Starke, 1; Sullivan, 5; Tippecanoe, 3; Vanderburgh, 9; Vigo, 1; Washington, 6.

## EXTERNAL CAUSES.

*Affections Produced by External Causes, for Past Five Years.*

CAUSE OF DEATH.	1910.	1911.	1912.	1913.	1914.
Suicides by poisoning.....	170	171	222	203	226
Suicides by asphyxia.....	6	12	18	18	14
Suicides by hanging or strangulation.....	64	78	63	47	60
Suicides by drowning.....	22	45	18	30	27
Suicides by firearms.....	95	45	101	114	121
Suicides by cutting or piercing instruments.....	11	19	26	20	23
Suicides from jumping from high places.....	3	4	1	2	1
Suicides by crushing.....	11	7	6	4	5
Other suicides.....	4	3	3	3	1
Poisoning by food.....	11	19	47	43	39
Other acute poisoning.....	67	69	68	74	82
Conflagration.....	14	12	15	19	31
Burns (conflagration excepted).....	169	202	184	173	148
Absorption of deleterious gases (conflagration excepted).....	29	47	80	68	74
Accidental drowning.....	144	183	185	275	162
Traumatism by firearms.....	70	68	59	85	63
Traumatism by cutting or piercing instruments.....	8	28	17	25	15
Traumatism by fall.....	414	441	452	465	434
Traumatism in mines and quarries.....	63	50	43	68	50
Traumatism by machines.....	59	43	57	65	50
Railroad accidents and injuries.....	433	423	445	493	354
Street car accidents and injuries.....	137	79	87	95	89
Automobile and other vehicles.....	82				
Automobile accidents.....		33	48	83	90
Injuries by other vehicles.....		46	68	82	93
Other crushings.....	87	98	60	47	66
Injuries by animals.....	71	85	50	44	45
Starvation.....		1	2		
Excessive cold.....	17	13	11		14
Effects of heat.....	25	32	18	96	64
Lightning.....	23	21	15	31	18
Electricity (lightning excepted).....	32	21	38	40	31
Homicides by firearms.....	79	92	88	108	123
Homicides by cutting or piercing instruments.....	12	12	14	15	19
Homicides by other means.....	30	19	31	29	36
Fractures (causes not specified).....	9	7	3	2	2
Other external violence.....	82	81	105	76	78
Total deaths by external causes.....	2,553	2,659	2,746	3,046	2,748

**EXTERNAL CAUSES.**

MONTHS.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
January.....	212	198	197	214	185	187	196
February.....	172	185	179	180	183	176	187
March.....	174	215	263	165	205	269	225
April.....	186	197	200	199	196	232	198
May.....	242	195	188	267	304	219	228
June.....	223	217	243	221	218	325	274
July.....	234	228	273	325	267	361	280
August.....	251	266	251	278	253	347	270
September.....	244	205	241	219	231	256	228
October.....	209	220	207	226	225	221	260
November.....	196	200	214	226	235	239	220
December.....	184	221	234	215	226	214	192
Totals.....	2,527	2,543	2,690	2,735	2,638	3,046	2,748
Accidents or undefined.....	2,021	2,030	1,902	2,081	2,049	2,453	2,902
Suicides.....	384	404	396	443	458	441	478
Homicides.....	122	109	121	123	131	152	178

**MONTHLY RECORD OF DEATHS FROM EXTERNAL CAUSES.**

(As published in Monthly Bulletin.)

January, 1914.—Total deaths, 183; males, 146; females, 37. Suicide total, 38; males, 30; females, 8. Means of suicide: Poisons, 17; asphyxia, 2; hanging or strangulation, 6; firearms, 11; cutting or piercing instruments, 2. Accidental or undefined—total, 136; males, 108; females, 28. Poisoning by food, 1; other acute poisonings, 3; conflagration, 1; burns (conflagration excepted), 14; absorption of deleterious gases (conflagration excepted), 6; accidental drowning, 2; traumatism by firearms, 2; traumatism by falls, 31; traumatism in mines, 4; traumatism by machines, 4; railroad accidents and injuries, 28; street car accidents and injuries, 9; automobile accidents and injuries, 7; injuries by other vehicles, 2; other crushing, 12; injuries by animals, 3; electricity (lightning excepted), 1; other external violence, 6. Homicide total, 9; males, 8; females, 1. Homicide by firearms, 6; homicide by other means, 3.

February, 1914.—Total deaths, 178; males, 128; females, 50. Suicide total, 29; males, 21; females, 8. Means of suicide, poison-

ing, 11; asphyxia, 2; hanging or strangulation, 4; drowning, 1; firearms, 9; cutting or piercing instruments, 2. Accidental or undefined total, 137; males, 96; females, 41. Poisoning by food, 2; other acute poisonings, 3; burns (conflagration excepted), 13; absorption of deleterious gases (conflagration excepted), 6; accidental drowning, 3; traumatism by firearms, 2; traumatism by cutting or piercing instruments, 2; traumatism by fall, 39; traumatism in mines, 1; traumatism by machines, 4; railroad accidents and injuries, 29; street car accidents and injuries, 11; automobile accidents and injuries, 1; injuries by other vehicles, 1; other crushing, 8; excessive cold, 2; electricity (lightning excepted), 2; other external violence, 8. Homicide total, 12; males, 11; females, 1. Homicide by firearms, 11; homicide by cutting or piercing instruments, 3.

March, 1914.—Total deaths, 221; males, 164; females, 57. Suicide total, 42; males, 31; females, 11. Means of suicide, poison, 14; asphyxia, 1; hanging or strangulation, 2; drowning, 4; firearms, 14; cutting or piercing instruments, 3; crushing, 4. Accidental or undefined total, 165; males, 125; females, 40. Poisoning by food, 4; other acute poisonings, 7; conflagration, 3; burns (conflagration excepted), 14; absorption of deleterious gases (conflagration excepted), 10; accidental drowning, 4; traumatism by firearms, 5; traumatism by cutting or piercing instruments, 2; traumatism by fall, 40; traumatism in mines, 8; traumatism by machines, 4; railroad accidents and injuries, 30; street-car accidents and injuries, 3; injuries by other vehicles, 4; other crushing, 3; injuries by animals, 7; excessive cold, 4; electricity (lightning excepted), 2; fractures (cause not specified), 7; other external violence, 4. Homicide total, 14; males, 8; females, 6. Homicide by firearms, 10; homicide by cutting or piercing instruments, 2; homicide by other means, 2.

April, 1914.—Total deaths, 185; males, 132; females, 53. Suicide total, 48; males, 39; females, 9. Means of suicide, poison, 23; asphyxia, 3; hanging or strangulation, 5; drowning, 8; firearms, 8; cutting or piercing instruments, 1. Accidental or undefined total, 126; males, 85; females, 41. Poisoning by food, 3; other acute poisonings, 9; conflagration, 1; burns (conflagration excepted), 5; accidental drowning, 7; absorption of deleterious gases (conflagration excepted), 5; traumatism by firearms, 4; traumatism by cutting or piercing instruments, 1; traumatism by fall, 30; traumatism in mines, 1; traumatism by machines, 3; railroad

accidents and injuries, 18; street car accidents and injuries, 9; automobile accidents and injuries, 4; injuries by other vehicles, 4; other crushing, 5; injuries by animals, 1; electricity (lightning excepted), 1; fractures (cause not specified), 2; other external violence, 4. Homicide, total, 11; males, 8; females, 3. Homicide by firearms, 7; homicide by cutting or piercing instruments, 1; homicide by other means, 3.

May, 1914.—Total deaths, 219; males, 172; females, 47. Suicide total, 44; males, 31; females, 13. Means of suicide, poison, 14; asphyxia, 2; hanging or strangulation, 11; suicide by drowning, 4; firearms, 8; cutting or piercing instruments, 2; jumping from high places, 2; crushing, 1. Accidental or undefined total, 155; males, 126; females, 29. Poisoning by food, 3; other acute poisonings, 5; conflagration, 1; burns (conflagration excepted), 11; absorption of deleterious gases (conflagration excepted), 1; accidental drowning, 24; traumatism by firearms, 3; traumatism by cutting or piercing instruments, 3; traumatism by fall, 18; traumatism in mines, 1; traumatism by machines, 2; railroad accidents and injuries, 33; street-car accidents and injuries, 8; injuries by other vehicles, 7; other crushing, 4; injuries by animals, 7; effects of heat, 2; lightning, 2; electricity (lightning excepted), 4; fractures (cause not specified), 3; other external violence, 7. Homicide total, 20; males, 15; females, 5. Homicide by firearms, 17; homicide by cutting or piercing instruments, 2; homicide by other means, 1.

June, 1914.—Total deaths, 247; males, 183; females, 62. Suicide total, 52; males, 37; females, 15. Means of suicide, poison, 26; hanging or strangulation, 6; drowning, 2; firearms, 16; cutting or piercing instruments, 1; other suicides, 1. Accidental or undefined total, 183; males, 140; females, 43. Other acute poisonings, 6; conflagration, 1; burns (conflagration excepted), 11; absorption of deleterious gases (conflagration excepted), 4; accidental drowning, 31; traumatism by firearms, 1; traumatism by fall, 37; traumatism in mines, 1; traumatism by machines, 5; railroad accidents and injuries, 27; street-car accidents and injuries, 7; automobile accidents and injuries, 3; injuries by other vehicles, 6; other crushing, 3; injuries by animals, 3; effects of heat, 21; lightning, 4; electricity (lightning excepted), 3; fractures (cause not specified), 2; other external violence, 7. Homicide total, 12; males, 8; females, 4. Homicide by firearms, 9; homicide by cutting or piercing instruments, 1; homicide by other means, 2.

July, 1914.—Total deaths, 263; males, 190; females, 73. Suicide total, 38; males, 22; females, 16. Means of suicide, poison, 17; asphyxia, 1; hanging or strangulation, 5; drowning, 2; firearms, 11; cutting or piercing instruments, 2. Accidental or undefined total, 210; males, 155; females, 55. Poisoning by food, 7; other acute poisonings, 8; conflagration, 1; burns (conflagration excepted), 10; absorption of deleterious gases (conflagration excepted), 5; accidental drowning, 35; traumatism by firearms, 8; traumatism by cutting or piercing instruments, 1; traumatism by fall, 38; traumatism in mines, 1; traumatism by machines, 5; railroad accidents and injuries, 22; street-car accidents and injuries, 6; automobile accidents and injuries, 10; injuries by other vehicles, 7; landslide, other crushing, 5; injuries by animals, 6; effects of heat, 18; lightning, 6; electricity (lightning excepted), 3; fractures (cause not specified), 1; other external violence, 7. Homicide total, 15; males, 13; females, 2. Homicide by firearms, 11; homicide by cutting or piercing instruments, 2; homicide by other means, 2.

August, 1914.—Total deaths, 248; males, 196; females, 52. Suicide total, 37; males, 25; females, 12. Means of suicide, poison, 22; hanging or strangulation, 4; drowning, 2; firearms, 8; cutting or piercing instruments, 1. Accidental or undefined total, 185; males, 149; females, 36. Poisoning by food, 5; other acute poisonings, 9; burns (conflagration excepted), 6; absorption of deleterious gases (conflagration excepted), 4; accidental drowning, 26; traumatism by firearms, 7; traumatism by cutting or piercing instruments, 3; traumatism by fall, 38; traumatism in mines, 2; traumatism by machines, 3; railroad accidents and injuries, 29; street-car accidents and injuries, 10; automobile accidents and injuries, 10; injuries by other vehicles, 11; other crushing, 7; injuries by animals, 3; effects of heat, 1; lightning, 3; electricity (lightning excepted), 4; other external violence, 4. Homicide total, 26; males, 22; females, 4. Homicide by firearms, 20; homicide by cutting or piercing instruments, 2; homicide by other means, 4.

September, 1914.—Total deaths, 221; males, 151; females, 70. Suicide total, 37; males, 30; females, 7. Means of suicide, poison, 21; asphyxia, 1; hanging or strangulation, 3; drowning, 3; firearms, 7; cutting or piercing instruments, 2. Accidental or undefined total, 175; males, 117; females, 58. Poisoning by food, 5; other acute poisonings, 7; conflagration, 1; burns (conflagration

excepted), 16; absorption of deleterious gases (conflagration excepted), 1; accidental drowning, 11; traumatism by firearms, 5; traumatism by cutting or piercing instruments, 1; traumatism by fall, 34; traumatism in mines, 6; traumatism by machines, 1; railroad accidents and injuries, 35; street-car accidents and injuries, 9; automobile accidents and injuries, 15; injuries by other vehicles, 12; other crushing, 2; injuries by animals, 2; lightning, 1; electricity (lightning excepted), 3; fractures (cause not specified), 4; other external violence, 4. Homicide total, 9; males, 4; females, 5. Homicide by firearms, 8; homicide by cutting or piercing instruments, 1.

October, 1914.—Total deaths, 235; males, 166; females, 14. Suicide total, 47; males, 33; females, 14. Means of suicide—poison, 19; asphyxia, 1; hanging or strangulation, 7; drowning, 2; firearms, 16; cutting or piercing instruments, 1; crushing, 1. Accidental or undefined total, 173; males, 120; females, 53. Poisoning by food, 3; other acute poisonings, 11; conflagration, 5; burns (conflagration excepted), 10; absorption of deleterious gases (conflagration excepted), 12; accidental drowning, 5; traumatism by firearms, 5; traumatism by cutting or piercing instruments, 1; traumatism by fall, 32; traumatism by machines, 2; traumatism in mines, 3; railroad accidents and injuries, 41; street-car accidents and injuries, 5; automobile accidents and injuries, 9; injuries by other vehicles, 7; other crushing, 4; injuries by animals, 2; electricity (lightning excepted), 3; fractures (cause not specified), 1; other external violence, 12. Homicide total, 15; males, 13; females, 2. Homicide by firearms, 7; homicide by cutting or piercing instruments, 1; homicide by other means, 7.

November, 1914.—Total deaths, 217; males, 156; females, 61. Suicide total, 31; males, 22; females, 9. Means of suicide, poisons, 22; hanging or strangulation, 3; drowning, 1; firearms, 4; cutting or piercing instruments, 1. Accidental or undefined total, 172; males, 121; females, 51; other acute poisonings, 2; conflagration, 6; burns (conflagration excepted), 16; absorption of deleterious gases (conflagration excepted), 7; accidental drowning, 4; traumatism by firearms, 6; traumatism by fall, 33; traumatism in mines, 6; traumatism by machines, 5; railroad accidents and injuries, 33; street-car accidents and injuries, 2; automobile accidents and injuries, 14; injuries by other vehicles, 13; other crushing, 4; injuries by animals, 6; electricity (lightning excepted), 3; fractures (causes not specified), 3; other external violence, 9. Homicide total, 14;

males, 13; females, 1. Homicide by firearms, 9; homicide by cutting or piercing instruments, 2; homicide by other means, 3.

December, 1914.—Total deaths, 190; males, 148; females, 42. Suicide total, 29; males, 21; females, 8. Means of suicide, poisons, 16; asphyxia, 1; hanging or strangulation, 2; drowning, 1; firearms, 8; cutting or piercing instruments, 1. Accidental or undefined total, 146; males, 115; females, 31. Food poisoning, 1; other acute poisonings, 3; conflagration, 3; burns (conflagration excepted), 21; absorption of deleterious gases (conflagration excepted), 7; accidental drowning, 2; traumatism by firearms, 10; traumatism by cutting or piercing instruments, 1; traumatism by fall, 36; traumatism in mines, 11; traumatism by machines, 1; railroad accidents and injuries, 23; street-car accidents and injuries, 4; automobile accidents and injuries, 3; injuries by other vehicles, 3; other crushing, 3; injuries by animals, 4; excessive cold, 2; other external violence, 8. Homicide total, 15; males, 12; females, 3. Homicide by firearms, 12; homicide by other means, 3.



**CANCER.**

MONTHS.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
January.....	117	141	145	176	154	198	172
February.....	134	152	133	167	163	185	162
March.....	120	145	165	166	180	189	183
April.....	162	141	167	151	183	168	202
May.....	153	162	162	153	142	204	208
June.....	140	149	157	156	178	173	195
July.....	171	163	154	169	184	207	194
August.....	150	169	165	150	166	204	191
September.....	155	160	157	154	146	197	176
October.....	171	150	159	163	172	177	170
November.....	137	145	152	168	163	168	173
December.....	129	151	150	165	186	156	168
Totals.....	1,739	1,828	1,872	1,938	2,018	2,226	2,193

## DEATHS FROM CANCER FOR TEN YEARS BY AGES, SEX AND RATE.

Year.	Population.	Under 1 Year.	1 Year.	2 Years.	3 Years.	4 Years.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.
1905.	2,048,549	1	1	2	6	3	4	2	5	7	12	28	45	85	118
1906.	2,048,549					1	3	2	5	13	14	35	49	92	131
1907.	2,714,744			1			5	1	5	7	8	27	42	103	154
1908.	2,730,144	1	1	1	1	1	3	3	3	9	23	22	70	82	140
1909.	2,733,550	4	3				3	3	6	10	18	35	70	101	144
1910.	2,700,876		2	4	3	1	3	3	6	4	14	30	66	104	190
1911.	2,700,876		2	2	1	1		3	9	10	22	39	66	123	190
1912.	2,730,506		1	1	1	1	4	5	4	9	16	44	65	111	134
1913.	2,709,710	4	5	1	1		5	4	2	11	24	56	66	111	174
1914.	2,796,957	1	2	3	1	4	1	2	8	9	24	46	77	123	179

## DEATHS FROM CANCER FOR TEN YEARS BY AGES, SEX AND RATE—Continued.

Year.	Population.	50 to 54.	55 to 59.	60 to 64.	65 to 69.	70 to 74.	75 to 79.	80 to 84.	85 to 95 and Over.	Un- known.	Total.	Rate.	Males.	Females.
1905.	2,048,549	151	165	189	201	176	128	81	6	8	1,424	53.7	596	828
1906.	2,048,549	164	135	186	171	173	130	96	10	8	1,417	53.5	564	853
1907.	2,714,744	153	181	214	212	160	119	106	10	6	1,512	55.7	687	825
1908.	2,730,144	199	236	252	240	198	149	105	9	1	1,739	63.6	755	984
1909.	2,733,550	217	201	240	251	215	170	120	10	2	1,828	66.8	804	1,024
1910.	2,700,876	199	213	254	222	205	180	101	43	1	1,837	68.0	722	1,115
1911.	2,700,876	187	231	228	285	253	172	68	64	2	1,919	71.7	775	1,144
1912.	2,730,506	200	265	255	305	246	193	107	51		2,018	73.6	797	1,221
1913.	2,709,710	228	283	288	306	287	195	119	55	1	2,228	80.3	860	1,366
1914.	2,796,957	318	276	275	302	273	203	119	46	1	2,183	78.4	864	1,339

## DEATHS FROM CANCER AND MALIGNANT TUMOR FOR THE YEAR 1914.

Total Number Deaths, and Death Rates per 100,000 Population.

COUNTIES.	Total.	Male.	Female.	Rates.
<i>Northern Counties</i> .....	<i>809</i>	<i>345</i>	<i>464</i>	<i>85.2</i>
Adams.....	17	7	10	77.5
Allen.....	92	35	57	92.9
Benton.....	5	1	4	39.4
Blackford.....	15	5	10	83.5
Carroll.....	12	4	8	66.7
Cass.....	31	9	22	83.3
DeKalb.....	23	11	12	91.0
Elkhart.....	73	30	43	144.7
Fulton.....	14	10	4	82.9
Grant.....	54	26	28	103.8
Howard.....	20	12	18	85.4
Huntington.....	24	12	12	83.1
Jasper.....	15	6	9	114.7
Jay.....	17	8	9	87.8
Kosciusko.....	25	12	13	89.0
Lagrange.....	12	5	7	79.2
Lake.....	54	21	33	51.5
Laporte.....	39	16	23	80.1
Marshall.....	25	11	14	103.2
Miami.....	23	13	10	76.4
Newton.....	12	3	9	114.2
Noble.....	19	9	10	77.5
Porter.....	23	9	14	110.8
Pulaski.....	14	5	9	105.2
Starke.....	11	6	5	103.8
Stauben.....	13	5	8	88.1
St. Joseph.....	61	27	34	66.3
Wabash.....	21	10	11	77.9
Wells.....	9	4	5	39.8
White.....	15	7	8	85.1
Whitley.....	11	6	5	64.6
<i>Central Counties</i> .....	<i>958</i>	<i>533</i>	<i>625</i>	<i>83.1</i>
Bartholomew.....	26	11	15	104.0
Boone.....	11	3	8	44.0
Brown.....	3	2	1	37.6
Clay.....	24	12	12	73.6
Clinton.....	32	13	19	117.9
Decatur.....	18	6	12	95.2
Delaware.....	37	9	28	70.7
Fayette.....	19	6	13	139.4
Fountain.....	15	5	10	73.9
Franklin.....	10	2	8	65.2
Hamilton.....	19	4	15	70.1
Hancock.....	18	7	11	94.6
Hendricks.....	10	4	6	47.9
Henry.....	14	6	8	46.1
Johnson.....	15	5	10	73.0
Madison.....	36	16	20	54.6
Marion.....	291	94	197	102.7
Monroe.....	21	7	14	86.8
Montgomery.....	27	5	22	89.6
Morgan.....	11	5	6	51.4
Owen.....	11	4	7	78.2
Parke.....	14	6	8	63.0
Putnam.....	23	13	10	111.9
Randolph.....	23	9	14	78.4
Rush.....	15	8	7	77.0

## DEATHS FROM CANCER AND MALIGNANT TUMOR FOR YEAR 1914—Continued.

COUNTIES.	Total.	Male.	Female.	Rates.
<i>Central Counties—Continued—</i>				
Shelby.....	18	7	11	65.4
Tippecanoe.....	49	15	34	120.5
Tipton.....	13	7	6	74.0
Union.....	8	3	5	127.8
Vermillion.....	15	6	9	75.2
Vigo.....	70	22	48	73.1
Warren.....	4	2	2	36.7
Wayne.....	38	9	29	84.1
<i>Southern Counties.....</i>	<i>426</i>	<i>142</i>	<i>284</i>	<i>63.3</i>
Clark.....	21	7	14	69.3
Crawford.....	3	1	2	24.9
Daviess.....	16	4	12	57.6
Dearborn.....	18	8	10	83.2
Dubois.....	6	3	3	30.2
Floyd.....	29	4	25	95.5
Gibson.....	15	5	10	49.5
Greene.....	16	4	12	40.6
Harrison.....	15	5	10	74.1
Jackson.....	13	3	10	52.5
Jefferson.....	31	11	20	151.4
Jennings.....	12	4	8	84.3
Knox.....	26	12	14	63.3
Lawrence.....	15	3	12	46.7
Martin.....	4	2	2	30.3
Ohio.....	6	1	5	34.7
Orange.....	8	3	5	43.7
Perry.....	12	5	7	60.9
Pike.....	5	2	3	22.9
Posey.....	21	9	12	106.7
Ripley.....	12	5	7	137.5
Scott.....	14	2	12	67.7
Spencer.....	20	5	15	58.2
Sullivan.....	12	3	9	121.1
Switzerland.....	57	22	35	70.7
Vanderburgh.....	11	6	5	49.5
Warrick.....	8	3	5	45.8
Washington.....	1,089			88.2
Urban.....	1,094			70.5
Rural.....	2,193	880	1,373	78.4
State.....				

## DEATHS IN INDIANA FROM PELAGRA BY COUNTIES FOR PAST FOUR YEARS

COUNTIES.	1911.	1912.	1913.	1914.
Grant.....			1	
Howard.....	1			1
Jackson.....			1	
Jefferson.....		2		
Laporte.....	1			
Marion.....			1	
Randolph.....	1			
Tippecanoe.....			1	
Wayne.....				1

## MONTHLY ANALYSIS OF DISEASE PREVALENCE.

(As published in the Bulletin.)

January, 1914.—Scarlet fever was reported as the most prevalent disease, 73 per cent. of observers reporting it present. The order of prevalence is as follows: Scarlet fever, diphtheria, tonsillitis, influenza, pulmonary tuberculosis, measles, acute bronchitis, acute rheumatism, typhoid fever, chickenpox, lobar pneumonia, bronchial pneumonia, whooping-cough, smallpox, other forms of tuberculosis, diarrhea and enteritis, malaria fever, intermittent and remittent fever, erysipelas, rabies in human, puerperal fever, dysentery, rabies in animals, poliomyelitis, cholera morbus, cerebro-spinal fever.

February, 1914.—Scarlet fever was reported as the most prevalent disease, 73 per cent. of observers reporting it present. The order of prevalence is as follows: Scarlet fever, diphtheria and croup, tonsillitis, bronchitis, influenza, pulmonary tuberculosis, measles, pneumonia, rheumatism, smallpox, whooping-cough, typhoid fever, chickenpox, diarrhea and enteritis, other forms of tuberculosis, malaria fever, erysipelas, intermittent and remittent fever, dysentery, cerebro-spinal fever, cholera morbus, puerperal fever, rabies in animals, rabies in human, poliomyelitis.

March, 1914.—Measles was reported as the most prevalent disease, 71 per cent. of observers reporting it present. The order of prevalence is as follows: Measles, scarlet fever, tonsillitis, influenza, acute bronchitis, pulmonary tuberculosis, lobar pneumonia, diphtheria and croup, acute rheumatism, whooping-cough, smallpox, typhoid fever, bronchial pneumonia, chickenpox, diarrhea and enteritis, malaria fever, cerebro-spinal fever, erysipelas, intermittent and remittent fever, other forms of tuberculosis, dysentery, cholera morbus, puerperal fever, poliomyelitis, rabies in human, rabies in animals.

April, 1914.—Measles was reported as the most prevalent disease. Seventy-one per cent. of observers reported it present. The order of prevalence is as follows: Measles, bronchitis, scarlet fever, pulmonary tuberculosis, rheumatism, tonsillitis, smallpox, lobar pneumonia, diphtheria and croup, influenza, bronchial pneumonia, whooping-cough, chickenpox, typhoid fever, malaria fever, diarrhea and enteritis, other forms of tuberculosis, erysipelas, intermittent and remittent fever, puerperal fever, rabies in human, cerebro-spinal fever, dysentery, rabies in animals, cholera morbus, poliomyelitis.

May, 1914.—As in the preceding month, measles was reported as the most prevalent disease; 74 per cent. of observers reported it present. The order of prevalence is as follows: Measles, scarlet fever, acute rheumatism, tonsillitis, smallpox, pulmonary tuberculosis, typhoid fever, diphtheria and croup, whooping-cough, acute bronchitis, lobar pneumonia, chickenpox, bronchial pneumonia, influenza, malaria fever, other forms of tuberculosis, intermittent and remittent fever, diarrhea and enteritis, dysentery, cholera morbus, erysipelas, rabies in human, puerperal fever, cerebro-spinal fever, poliomyelitis, rabies in animals.

June, 1914.—Measles was reported as the most prevalent disease. This has been the case for the two preceding months. The order of prevalence for the month was as follows: Measles, pulmonary tuberculosis, diarrhea and enteritis, typhoid fever, rheumatism, tonsillitis, smallpox, scarlet fever, acute bronchitis, cholera morbus, whooping-cough, diphtheria, dysentery, chickenpox, malaria fever, influenza, other forms of tuberculosis, intermittent and remittent fever, lobar and bronchial pneumonia, rabies in human, cerebro-spinal fever, erysipelas, puerperal fever, rabies in animals, poliomyelitis, trachoma.

July, 1914.—Typhoid fever was reported as the most prevalent disease. The order of prevalence for the month was as follows: Typhoid fever, diarrhea and enteritis, cholera morbus, tonsillitis, pulmonary tuberculosis, acute rheumatism, dysentery, measles, diphtheria and croup, scarlet fever, malaria fever, acute bronchitis, whooping-cough, intermittent and remittent fever, smallpox, influenza, other forms of tuberculosis, erysipelas, lobar pneumonia, rabies in human, puerperal fever, rabies in animals, poliomyelitis, cerebro-spinal fever.

August, 1914.—Typhoid fever was reported as the most prevalent disease; 69 per cent. of observers report it present. The order of prevalence is as follows: Typhoid fever, diarrhea and enteritis, tonsillitis, cholera morbus, diphtheria and croup, dysentery, acute rheumatism, pulmonary tuberculosis, scarlet fever, acute bronchitis, malaria fever, intermittent and remittent fever, smallpox, measles, influenza, other forms of tuberculosis, whooping-cough, rabies in human, erysipelas, lobar pneumonia, bronchial pneumonia, chickenpox, poliomyelitis, puerperal fever, cerebro-spinal fever, rabies in animals.

September, 1914.—Typhoid fever, as in the two preceding months, was again reported as the most prevalent disease. The

order of prevalence for the month is as follows: Typhoid fever, diphtheria, scarlet fever, tonsillitis, diarrhea and enteritis, acute rheumatism, pulmonary tuberculosis, acute bronchitis, dysentery, malaria fever, smallpox, cholera morbus, intermittent and remittent fever, influenza, measles, other forms of tuberculosis, bronchial pneumonia, lobar pneumonia, rabies in human, whooping-cough, chickenpox, puerperal fever, erysipelas, poliomyelitis, rabies in animals, cerebro-spinal fever.

October, 1914.—Typhoid fever, as in the three preceding months, was reported as the most prevalent disease. The order of prevalence for the month was as follows: Typhoid fever (enteric), scarlet fever, diphtheria and croup, tonsillitis, acute rheumatism, pulmonary tuberculosis, acute bronchitis, diarrhea and enteritis, smallpox, malaria fever, influenza, measles, chickenpox, dysentery, intermittent and remittent fever, other forms of tuberculosis, bronchial pneumonia, whooping-cough, lobar pneumonia, cholera morbus, poliomyelitis, erysipelas, puerperal fever, cerebro-spinal fever, rabies in human, rabies in animals.

November, 1914.—Scarlet fever was reported as the most prevalent disease, 67 per cent. of observers reporting it present. The order of prevalence is as follows: Scarlet fever, typhoid fever, diphtheria, tonsillitis, acute bronchitis, influenza, pulmonary tuberculosis, chickenpox, acute rheumatism, lobar pneumonia, broncho-pneumonia, smallpox, diarrhea and enteritis, malaria fever, measles, intermittent and remittent fever, dysentery, other forms of tuberculosis, whooping-cough, cholera morbus, erysipelas, rabies in human, puerperal fever, poliomyelitis, cerebro-spinal fever, rabies in animals.

December, 1914.—Scarlet fever, as in the preceding month, was reported as the most prevalent disease, 66 per cent. of the observers reporting the disease present. The order of prevalence is as follows: Scarlet fever, diphtheria, tonsillitis, influenza, acute bronchitis, acute rheumatism, typhoid fever, chickenpox, lobar pneumonia, smallpox, pulmonary tuberculosis, bronchial pneumonia, measles, diarrhea and enteritis, erysipelas, malaria fever, whooping-cough, other forms of tuberculosis, puerperal fever, intermittent and remittent fever, dysentery, cholera morbus, poliomyelitis, rabies in human, cerebro-spinal fever, rabies in animals.

# TABLES

OF

## ANNUAL STATISTICAL REPORT

### FOR THE YEAR 1914.

TABLE No. 1.

*Deaths in Indiana, During the Year Ending December 31, 1914, with Rates per 100,000 Population According to the U. S. Census of 1914.*

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
<b>I. GENERAL DISEASES.</b>			
1	Typhoid fever.....	591	21.1
2	Typhus fever.....		
3	Relapsing fever.....		
4	Malaria.....	66	2.3
5	Smallpox.....	8	.2
6	Measles.....	151	5.4
7	Scarlet fever.....	114	4.0
8	Whooping cough.....	295	10.5
9	Diphtheria and group.....	338	13.7
10	Influenza.....	292	10.4
11	Miliary fever.....		
12	Asiatic cholera.....		
13	Cholera nostras.....	10	.3
14	Dysentery.....	168	6.0
15	Plague.....		
16	Yellow fever.....		
17	Leprosy.....		
18	Erysipelas.....	89	3.1
19	Other epidemic diseases.....	10	.3
20	Purulent infection and septicemia.....	45	1.6
21	Glanders.....		
22	Anthrax.....	1	.03
23	Rabies.....	22	.7
24	Tetanus.....		
25	Mycoses.....		
26	Pellagra.....	2	.07
27	Beriberi.....		
28	Tuberculosis of the lungs.....	3,405	121.8
29	Acute miliary tuberculosis.....	66	2.3
30	Tuberculous meningitis.....	202	7.2
31	Abdominal tuberculosis.....	216	7.7
32	Pott's disease.....	28	1.0
33	White swelling.....	19	.6
34	Tuberculosis of other organs.....	89	3.1
35	Disseminated tuberculosis.....	52	1.8



TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
36	Rickettsa.....	18	.6
37	Syphilis.....	152	5.4
38	Gonococcus infection.....	6	.2
39	Cancer of the buccal cavity.....	88	3.1
40	Cancer of the stomach and liver.....	884	31.6
41	Cancer of the peritoneum, intestines and rectum.....	232	8.2
42	Cancer of the female genital organs.....	352	12.5
43	Cancer of the breast.....	198	7.0
44	Cancer of the skin.....	130	4.6
45	Cancer of other organs, or of organs not specified.....	309	11.0
46	Other tumors (tumors of the female genital organs excepted).....	9	.3
47	Acute articular rheumatism.....	162	5.7
48	Chronic rheumatism and gout.....	46	1.6
49	Scurvy.....	4	.1
50	Diabetes.....	392	14.0
51	Exophthalmic goitre.....	62	2.2
52	Addison's disease.....	16	.5
53	Leuchaemia.....	60	2.1
54	Anemia, chlorosis.....	137	4.9
55	Other general diseases.....	30	1.0
56	Alcoholism (acute or chronic).....	99	3.5
57	Chronic lead poisoning.....	3	.1
58	Other chronic occupation poisonings.....		
59	Other chronic poisonings.....	16	.5
II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSES.			
60	Encephalitis.....	44	1.5
61a	Simple meningitis.....	64	2.2
61b	Cerebrospinal meningitis (undefined).....	17	.6
61c	Cerebrospinal fever.....	81	2.8
62	Locomotor ataxia.....	75	2.6
63a	Acute anterior poliomyelitis.....	27	.9
63b	Other diseases of the spinal cord.....	152	5.4
64	Cerebral hemorrhage, apoplexy.....	2,267	80.7
65	Softening of the brain.....	64	2.2
66	Paralysis without specified cause.....	295	10.5
67	General paralysis of the insane.....	208	7.4
68	Other forms of mental alienation.....	80	2.8
69	Epilepsy.....	173	6.1
70	Convulsions (nonpuerperal).....		
71	Convulsions of infants.....	34	1.2
72	Chorea.....	7	.2
73	Neuralgia and neuritis.....	18	.6
74	Other diseases of the nervous system.....	63	2.2
75	Disease of the eyes and their annexa.....	5	.1
76	Disease of the ears.....	44	1.5
III. DISEASES OF THE CIRCULATORY SYSTEM.			
77	Pericarditis.....	49	1.7
78	Acute endocarditis.....	146	5.2
79	Organic disease of the heart.....	3,915	140.1
80	Angina pectoris.....	298	10.6
81	Diseases of the arteries, atheroma, aneurysm, etc.....	824	29.4
82	Embolism and thrombosis.....	102	3.6
83	Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....	19	.6
84	Diseases of the lymphatic system (lymphangitis, etc.).....	7	.2
85	Hemorrhage; other diseases of the circulatory system.....	9	.3

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
IV. DISEASES OF THE RESPIRATORY SYSTEM.			
86	Diseases of the nasal fossae .....	6	.2
87	Diseases of the larynx .....	46	1.6
88	Diseases of the thyroid body .....	23	.8
89	Acute bronchitis .....	211	7.5
90	Chronic bronchitis .....	197	7.0
91	Broncho pneumonia .....	1,142	40.8
92a	Lobar pneumonia .....	1,168	41.7
92b	Pneumonia (undefined) .....	550	19.6
93	Pleurisy .....	53	1.8
94	Pulmonary congestion, pulmonary apoplexy .....	37	1.3
95	Gangrene of the lung .....	4	.1
96	Asthma .....	82	2.9
97	Pulmonary emphysema .....	8	.2
98	Other diseases of the respiratory system (tuberculosis excepted) .....	24	.8
V. DISEASES OF THE DIGESTIVE SYSTEM.			
99	Diseases of the mouth and annexa .....	14	.5
100	Diseases of the pharynx .....	52	1.8
101	Diseases of the esophagus .....	5	.1
102	Ulcer of the stomach .....	100	3.5
103	Other diseases of the stomach. (Cancer excepted) .....	549	19.6
104	Diarrhoea and enteritis (under two years) .....	1,627	58.2
105	Diarrhoea and enteritis (two years and over) .....	460	16.4
106	Ankylostomiasis .....		
107	Intestinal parasites .....	5	.1
108	Appendicitis and typhlitis .....	333	11.9
109a	Hernia .....	109	3.8
109b	Intestinal obstruction .....	243	8.8
110	Other diseases of the intestines .....	101	3.6
111	Acute yellow atrophy of the liver .....	17	.6
112	Hydatid tumor of the liver .....		
113	Cirrhosis of the liver .....	328	11.7
114	Biliary calculi .....	125	4.4
115	Other diseases of the liver .....	188	6.7
116	Diseases of the spleen .....	6	.2
117	Simple peritonitis (nonpuerperal) .....	55	1.9
118	Other diseases of the digestive system (cancer and tuberculosis excepted) .....	11	.3
VI. NONVENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.			
119	Acute nephritis .....	268	9.5
120	Bright's disease .....	2,426	86.7
121	Chyluria .....		
122	Other diseases of the kidneys and annexa .....	42	1.5
123	Calculi of the urinary passage .....	20	.7
124	Diseases of the bladder .....	86	3.0
125	Diseases of the urethra, urinary abscess, etc .....	7	.2
126	Diseases of the prostate .....	110	3.9
127	Nonvenereal diseases of the male genital organs .....		
128	Uterine hemorrhage (nonpuerperal) .....	1	.03
129	Uterine tumor (noncancerous) .....	43	1.5
130	Other diseases of the uterus .....	23	.8
131	Cysts and other tumors of the ovary .....	37	1.3
132	Salpingitis and other diseases of the female genital organs .....	70	2.5
133	Nonpuerperal diseases of the breast (cancer excepted) .....	12	.07

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
VII. THE PUERPERAL STATE.			
134	Accidents of pregnancy.....	49	1.7
135	Puerperal hemorrhage.....	31	1.1
136	Other accidents of labor.....	31	1.1
137	Puerperal septicemia.....	220	7.8
138	Puerperal albuminuria and convulsions.....	108	3.8
139	Puerperal phlegmasia, albadolens, embolus, sudden death.....	9	.3
140	Following childbirth (not otherwise defined).....	9	.3
141	Puerperal diseases of the breast.....		
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.			
142	Gangrene.....	61	2.1
143	Furuncle.....	14	.5
144	Acute abscess.....	13	.4
145	Other diseases of the skin and annexa.....	14	.5
IX. DISEASES OF THE BONES AND OF ORGANS OF LOCOMOTION.			
146	Diseases of the bones (tuberculosis excepted).....	69	2.4
147	Diseases of the joints (tuberculosis and rheumatism excepted).....	2	.07
148	Amputations.....		
149	Other diseases of the organs of locomotion.....	3	.1
X. MALFORMATION.			
150a	Hydrocephalus.....	38	1.3
150b	Congenital malformation of the heart.....	326	11.5
150c	Other congenital malformation.....	121	4.3
XI. EARLY INFANCY.			
151a	Premature birth.....	1,268	45.2
151b	Congenital debility, atrophy, marasmus, etc.....	203	7.2
152a	Injuries at birth.....	169	6.0
152b	Other causes peculiar to early infancy.....	220	7.8
153	Lack of care.....	8	.2
XII. OLD AGE.			
154	Senility.....	286	10.2
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.			
155	Suicide by poison.....	226	8.0
156	Suicide by asphyxia.....	14	.5
157	Suicide by hanging or strangulation.....	60	2.1
158	Suicide by drowning.....	27	.9
159	Suicide by firearms.....	121	4.3
160	Suicide by cutting or piercing instruments.....	23	.8
161	Suicide by jumping from high places.....	1	.03
162	Suicide by crushing.....	5	.1
163	Other suicides.....	1	.03
164	Poisoning by food.....	39	1.3
165	Other acute poisonings.....	82	2.9
166	Conflagration.....	31	1.1
167	Burns (conflagration excepted).....	148	5.2
168	Absorption of deleterious gases (conflagration excepted).....	74	2.6
169	Accidental drowning.....	162	5.7
170	Traumatism by firearms.....	63	2.2
171	Traumatism by cutting or piercing instruments.....	15	.5
172	Traumatism by fall.....	434	15.5
173a	Traumatism in mines.....	48	1.7
173b	Traumatism in quarries.....	2	.07

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
174	Traumatism by machines.....	50	1.7
175a	Railroad accidents and injuries.....	354	12.6
175b	Street car accidents and injuries.....	89	3.1
175c	Automobile accidents and injuries.....	90	3.2
175d	Injuries by other vehicles.....	93	3.3
175e	Other crushing.....	66	2.3
176	Injuries by animals.....	45	1.6
177	Starvation.....		
178	Excessive cold.....	14	.5
179	Effects of heat.....	64	2.2
180	Lightning.....	18	.6
181	Electricity (lightning excepted).....	31	1.1
182	Homicide by firearms.....	123	4.3
183	Homicide by cutting or piercing instruments.....	19	.6
184	Homicide by other means.....	36	1.2
185	Fractures (cause not specified).....	2	.07
186	Other external violence.....	78	2.7
XIV. ILL-DEFINED DISEASES.			
187	Ill-defined organic disease.....	2	.07
188	Sudden death.....		
189a	Ill-defined.....	4	.1
189b	Not specified or unknown.....	16	.5
	Total death from all causes.....	35,869	1,282.9

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
VII. THE PUERPERAL STATE.			
134	Accidents of pregnancy.....	49	1.7
135	Puerperal hemorrhage.....	31	1.1
136	Other accidents of labor.....	31	1.1
137	Puerperal septicemia.....	220	7.8
138	Puerperal albuminuria and convulsions.....	108	3.8
139	Puerperal phlegmasia, albedolens, embolus, sudden death.....	9	.3
140	Following childbirth (not otherwise defined).....	9	.3
141	Puerperal diseases of the breast.....		
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.			
142	Gangrene.....	61	2.1
143	Furuncle.....	14	.5
144	Acute abscess.....	13	.4
145	Other diseases of the skin and annexa.....	14	.5
IX. DISEASES OF THE BONES AND OF ORGANS OF LOCOMOTION.			
146	Diseases of the bones (tuberculosis excepted).....	69	2.4
147	Diseases of the joints (tuberculosis and rheumatism excepted).....	2	.07
148	Amputations.....		
149	Other diseases of the organs of locomotion.....	3	.1
X. MALFORMATION.			
150a	Hydrocephalus.....	38	1.3
150b	Congenital malformation of the heart.....	326	11.5
150c	Other congenital malformation.....	121	4.3
XI. EARLY INFANCY.			
151a	Premature birth.....	1,268	45.3
151b	Congenital debility, atrophy, marasmus, etc.....	203	7.2
152a	Injuries at birth.....	169	6.0
152b	Other causes peculiar to early infancy.....	220	7.8
153	Lack of care.....	8	.2
XII. OLD AGE.			
154	Senility.....	286	10.2
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.			
155	Suicide by poison.....	226	8.0
156	Suicide by asphyxia.....	14	.5
157	Suicide by hanging or strangulation.....	60	2.1
158	Suicide by drowning.....	27	.9
159	Suicide by firearms.....	121	4.3
160	Suicide by cutting or piercing instruments.....	23	.8
161	Suicide by jumping from high places.....	1	.03
162	Suicide by crushing.....	5	.1
163	Other suicides.....	1	.03
164	Poisoning by food.....	39	1.3
165	Other acute poisonings.....	82	2.9
166	Conflagration.....	31	1.1
167	Burns (conflagration excepted).....	148	5.2
168	Absorption of deleterious gases (conflagration excepted).....	74	2.6
169	Accidental drowning.....	162	5.7
170	Traumatism by firearms.....	63	2.2
171	Traumatism by cutting or piercing instruments.....	15	.5
172	Traumatism by fall.....	434	15.5
173a	Traumatism in mines.....	48	1.7
173b	Traumatism in quarries.....	2	.07

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
174	Traumatism by machines.....	50	1.7
175a	Railroad accidents and injuries.....	354	12.6
175b	Street car accidents and injuries.....	89	3.1
175c	Automobile accidents and injuries.....	90	3.2
175d	Injuries by other vehicles.....	93	3.3
175e	Other crushing.....	66	2.3
176	Injuries by animals.....	45	1.6
177	Starvation.....		
178	Excessive cold.....	14	.5
179	Effects of heat.....	64	2.2
180	Lightning.....	18	.6
181	Electricity (lightning excepted).....	31	1.1
182	Homicide by firearms.....	123	4.3
183	Homicide by cutting or piercing instruments.....	19	.6
184	Homicide by other means.....	36	1.2
185	Fractures (cause not specified).....	2	.07
186	Other external violence.....	78	2.7
XIV. ILL-DEFINED DISEASES.			
187	Ill-defined organic disease.....	2	.07
188	Sudden death.....		
188a	Ill-defined.....	4	.1
188b	Not specified or unknown.....	16	.5
	Total death from all causes.....	35,869	1,282.9

TABLE No. 2.

Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Condition, for the Year Ending December 31, 1914. International Classification.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
<b>I. GENERAL DISEASES.</b>												
1. Typhoid fever.....	706	818	950	948	887	748	704	747	763	785	737	700
2. Typhus fever.....	38	39	44	38	22	32	37	60	71	76	78	46
3. Relapsing fever.....	..	..	..	..	..	..	..	..	..	..	..	..
4. Malaria.....	3	2	1	2	2	9	6	6	17	7	4	6
5. Smallpox.....	1	..	..	1	1	1	1	1	..	..	..	..
6. Measles.....	10	16	24	20	28	20	7	4	1	4	6	2
7. Scarlet fever.....	18	7	10	21	4	6	4	..	..	..	..	..
8. Whooping cough.....	27	21	41	62	60	22	28	10	..	..	..	..
9. Diphtheria and croup.....	46	41	25	21	21	13	11	21	26	30	22	14
10. Influenza.....	47	51	71	57	94	2	8	1	1	2	6	21
11. Military fever.....	..	..	..	..	..	..	..	..	..	..	..	..
12. Asiatic cholera.....	..	..	..	..	4	1	2	2	2	..	1	..
13. Cholera nostras.....	..	..	..	..	..	..	..	..	..	..	..	..
14. Dysentery.....	3	6	4	..	..	6	24	42	27	62	19	..
15. Plague.....	..	..	..	..	..	..	..	..	..	..	..	..
16. Yellow fever.....	..	..	..	..	..	..	..	..	..	..	..	..
17. Leprosy.....	..	..	..	..	..	..	..	..	..	..	..	..
18. Erysipelas.....	10	9	14	9	8	8	4	7	6	6	6	6
19. Other epidemic diseases.....	2	1	2	2	..	1	..	..	..	..	..	..
20. Purulent infection and septicæmia.....	4	2	6	6	3	1	6	1	6	4	..	..
21. Glanders.....	..	..	..	..	..	..	..	..	..	..	..	..
22. Anthrax.....	..	..	..	..	..	..	..	..	..	..	..	..
23. Rabies.....	..	..	..	..	..	..	..	..	..	..	..	..
24. Tetanus.....	..	..	..	..	..	..	..	..	..	..	..	..
25. Mycoses.....	1	1	..	3	1	2	2	1	6	8	2	1

26. Pulmona.....	1	336	333	320	260	279	252	251	241	228	261
27. Bactera.....	3	9	9	3	2	6	2	8	10	6	4
28. Tuberculosis of the lungs.....	19	10	20	26	13	20	14	13	16	17	17
29. Acute military tuberculosis.....	5	16	15	21	19	14	22	26	23	14	20
30. Tuberculosis meningitis.....	3	1	4	2	1	3	2	3	1	2	2
31. Abdominal tuberculosis.....	1	3	1	1	1	3	1	1	4	1	2
32. Pot's disease.....	9	5	8	7	9	9	6	9	4	2	9
33. White swellings.....	2	2	5	9	4	2	3	2	5	6	6
34. Tuberculosis of other organs.....	2	2	5	9	4	2	3	2	5	6	6
35. Disseminated tuberculosis.....	2	2	5	9	4	2	3	2	5	6	6
36. Eickets.....	2	2	5	9	4	2	3	2	5	6	6
37. Syphilis.....	6	5	13	10	10	16	14	8	18	18	18
38. Gonococcus infection.....	14	5	5	8	7	12	4	8	5	5	6
39. Cancer of the buccal cavity.....	39	67	72	78	80	83	75	67	79	68	74
40. Cancer of the stomach, liver.....	23	18	16	15	24	24	19	17	12	19	30
41. Cancer of the peritoneum, intestines, rectum.....	25	24	30	33	29	25	31	37	31	28	17
42. Cancer of the female genital organs.....	13	11	13	17	16	15	16	12	19	20	10
43. Cancer of the breast.....	6	4	13	17	16	10	12	15	6	10	14
44. Cancer of the skin.....	27	30	32	28	29	23	33	17	13	23	27
45. Cancer of other organs and organs not specified.....	1	1	4	4	1	1	1	1	1	1	1
46. Other tumors (tumors of the female genital organs excepted).....	11	15	24	26	15	12	16	7	9	8	8
47. Acute articular rheumatism.....	3	3	6	6	6	3	2	6	5	2	3
48. Chronic rheumatism and gout.....	33	30	31	41	35	34	19	27	34	27	50
49. Scurvy.....	2	3	4	6	4	4	9	7	7	9	5
50. Diabetes.....	2	2	2	3	1	2	2	2	2	2	1
51. Exophthalmic goitre.....	6	3	7	4	5	4	4	9	4	1	7
52. Addison's disease.....	12	8	13	11	10	13	15	11	13	11	10
53. Leucoderma.....	2	2	2	6	2	2	1	3	4	1	4
54. Anemia, chlorosis.....	8	9	10	4	6	6	5	7	19	2	16
55. Other general diseases.....	1	1	1	3	4	1	1	1	2	1	1
56. Alcoholism (acute or chronic).....	1	1	1	3	4	1	1	1	2	1	1
57. Chronic lead poisoning.....	1	1	1	3	4	1	1	1	2	1	1
58. Other chronic occupation poisonings.....	1	1	1	3	4	1	1	1	2	1	1
59. Other chronic poisonings.....	1	1	1	3	4	1	1	1	2	1	1
II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSES.											
60. Encephalitis.....	307	309	375	332	354	262	298	274	276	293	330
61. Meningitis.....	1	2	6	10	4	7	6	2	2	2	2
A. Simple meningitis.....	6	5	8	4	5	4	5	4	8	6	5
B. Cerebrospinal meningitis (undefined).....	1	2	1	2	1	3	2	1	3	2	2
C. Cerebrospinal fever.....	5	4	11	10	20	6	4	2	3	5	7



TABLE No. 2—Continued.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
62. Locomotor ataxia.....	6	3	9	6	2	9	12	7	5	4	8	4
63. Other diseases of the spinal cord.....	5	1	2	3	3	1	2	5	4	2	2	.....
A. Acute anterior poliomyelitis.....	5	0	15	16	19	20	16	12	10	10	2	16
B. Other diseases of the spinal cord.....	198	203	242	191	192	171	186	171	163	167	192	211
64. Cerebral hemorrhage, apoplexy.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
65. Softening of the brain.....	3	4	11	5	7	3	3	5	2	9	5	3
66. Paralysis without specified cause.....	22	26	20	29	32	24	10	32	29	21	19	36
67. General paralysis of the insane.....	21	16	17	14	22	13	13	16	17	20	21	18
68. Other forms of mental alienation.....	4	5	4	6	4	11	10	7	8	7	7	12
69. Epilepsy.....	7	10	12	22	23	15	22	16	8	13	13	12
70. Convulsions (nonpuerperal).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
71. Convulsions of infants.....	6	4	2	2	2	3	3	5	3	1	2	1
72. Chorea.....	1	1	1	1	1	.....	.....	3	3	.....	.....	.....
73. Neuralgia and neuritis.....	3	3	2	1	3	.....	.....	2	.....	3	1	.....
74. Other diseases of the nervous system.....	7	4	5	4	11	5	2	3	6	4	3	9
75. Diseases of the eyes and their annexa.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
76. Diseases of the ears.....	1	.....	1	.....	.....	.....	1	.....	.....	1	.....	1
.....	3	7	8	6	3	3	1	4	2	.....	3	4
III. DISEASES OF THE CIRCULATORY SYSTEM.												
77. Pericarditis.....	514	453	567	538	467	435	380	369	381	405	415	444
78. Acute endocarditis.....	.....	6	5	5	6	4	3	4	4	4	4	4
79. Organic diseases of the heart.....	7	11	25	11	16	12	13	9	12	11	9	10
80. Angina pectoris.....	400	329	404	407	333	321	272	257	281	296	291	324
81. Diseases of the arteries, atheroma, aneurysm, etc.....	33	19	43	27	26	23	17	23	14	22	24	17
.....	64	74	75	79	77	65	61	62	60	64	66	77
82. Embolism and thrombosis.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....	9	10	10	6	7	7	12	12	7	6	7	8
84. Diseases of the lymphatic system (lymphangitis, etc.).....	.....	4	2	2	.....	1	1	1	1	2	2	3
85. Hemorrhage; other diseases of the circulatory system.....	1	.....	1	1	2	2	.....	1	.....	1	.....	1
IV. DISEASES OF THE RESPIRATORY SYSTEM.												
86. Diseases of the nasal fossae.....	513	453	612	539	269	129	113	116	99	141	229	338
87. Diseases of the larynx.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
88. Diseases of the thyroid body.....	10	8	4	3	2	1	1	4	2	3	3	7
89. Acute bronchitis.....	17	2	2	1	2	5	2	2	1	1	1	3
90. Chronic bronchitis.....	18	33	41	36	22	7	7	8	6	8	10	16
.....	.....	15	23	22	30	12	14	17	12	8	19	12

91. Broncho pneumonia.	165	145	179	199	92	37	36	27	24	43	71	119
92. Pneumonia.	152	141	223	173	31	39	24	33	28	39	73	126
A. Lobar pneumonia.	100	84	98	85	37	12	10	14	13	22	36	39
B. Pneumonia (undefined).	5	6	6	4	4	5	7	3	6	1	4	6
93. Pleurisy.	4	8	5	1	4	1	2	2	2	2	4	2
94. Pulmonary congestion, pulmonary apoplexy.	9	9	10	11	4	7	1	3	2	7	6	7
95. Gangrene of the lung.	1	1	1	1	1	1	1	1	1	1	1	1
96. Asthma.	1	1	1	1	1	1	1	1	1	1	1	1
97. Pulmonary emphysema.	1	1	3	2	5	1	1	3	2	1	1	3
98. Other diseases of the respiratory system (tuberculosis excepted).	284	244	273	273	298	303	541	595	570	439	278	335
V. DISEASES OF THE DIGESTIVE SYSTEM.												
99. Diseases of the mouth and anus.	1	1	3	2	1	1	1	1	1	1	2	1
100. Diseases of the pharynx.	5	3	3	4	7	3	4	2	4	3	8	6
101. Diseases of the oesophagus.	12	7	10	6	13	5	7	6	11	6	3	9
102. Ulcer of the stomach.	39	50	49	43	50	41	65	54	49	44	34	31
103. Other diseases of the stomach (cancer excepted).	59	42	54	58	76	91	279	330	292	223	89	41
104. Diarrhoea and enteritis (under 2 years)...	33	23	24	29	21	29	63	84	61	41	30	23
105. Diarrhoea and enteritis (2 years and over).	1	1	1	1	1	1	1	1	1	1	1	1
106. Ankylostomiasis.	21	25	29	21	32	35	30	29	39	24	18	30
107. Intestinal parasites.	19	10	7	14	10	6	13	8	5	9	9	6
108. Appendicitis and typhilitis.	20	14	22	25	15	26	16	23	26	24	23	16
109. Hernia, intestinal obstruction.	8	10	6	13	8	13	7	7	8	6	5	11
A. Hernia.	1	1	3	1	3	2	1	1	1	3	1	1
B. Intestinal obstruction.	38	28	27	25	26	24	29	30	31	28	19	33
110. Other diseases of the intestines.	9	13	12	12	14	12	7	12	12	7	7	9
111. Acute yellow atrophy of the liver.	10	11	16	16	21	12	15	13	25	12	15	13
112. Hydatid tumor of the liver.	1	1	2	2	2	1	1	1	1	1	1	2
113. Cirrhosis of the liver.	6	5	3	2	1	4	4	13	4	7	4	2
114. Biliary calculi.	1	1	4	1	1	1	1	1	2	1	3	1
115. Other diseases of the liver.	266	267	328	276	282	241	254	329	238	243	260	251
116. Diseases of the spleen.	23	19	26	22	21	21	20	16	23	19	29	29
117. Simple peritonitis (nonpurulent).	204	206	262	212	213	188	203	173	160	192	194	190
118. Other diseases of the digestive system (cancer and tuberculosis excepted).	4	4	3	4	1	1	3	3	6	2	6	5
excepted)	1	5	2	2	2	2	1	1	1	2	4	1
VI. NONFEBRILE DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.												
119. Acute nephritis.	23	19	26	22	21	21	20	16	23	19	29	29
120. Bright's disease.	204	206	262	212	213	188	203	173	160	192	194	190
121. Chyluria.	4	4	3	4	1	1	3	3	6	2	6	5
122. Other diseases of the kidneys and annexa.	1	5	2	2	2	2	1	1	1	2	4	1
123. Calculi of the urinary passages.												

TABLE No. 2 Continued.

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
124. Diseases of the bladder.....	9	7	11	11	11	8	9	9		9	9	4
125. Disease of the ureters, urinary abscess, etc.....	1	1			1					3		
126. Diseases of the prostate.....	6	14	9	8	10	5	4	14	6	6	2	14
127. Nonverruca diseases of the male genital organs.....												
128. Uterine hæmorrhage (nonpuerperal).....								1				
129. Uterine tumor (noncancerous).....	5	1	4	3	4	6	1	4	4	4	4	1
130. Other diseases of the uterus.....	3	3	4	4	4	1	3	3	1	1	1	3
131. Cysts and other tumors of the ovary.....	4	1	4	3	3	1	4	6	6	6	2	3
132. Salpingitis and other diseases of the female genital organs.....	6	6	5	6	10	9	7	7	8	3	6	2
133. Nonpuerperal diseases of the breast (cancer excepted).....					1					1		
VII. THE PUERPERAL STATE.												
134. Accidents of pregnancy.....	37	40	47	55	46	25	37	21	24	27	24	47
135. Puerperal hæmorrhage.....	3	3	3	3	3	5	4	3	3	4	4	4
136. Other accidents of labor.....	1	1	2	4	3	1	3	4	1	1	1	3
137. Puerperal septicæmia.....	6	4	3	3	3	6	3	3	1	3	3	3
138. Puerperal albuminuria and convulsions.....	17	20	24	24	22	10	13	14	14	17	10	10
139. Puerperal puerperia, alba dolens, embolus, sudden death.....	9	12	11	15	11	10	6	7	4	11	3	3
140. Following childbirth (not otherwise defined).....	2	2	1	1		1	3	1	1		2	
141. Puerperal diseases of the breast.....												
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.												
142. Gangrene.....	12	3	12	6	10	14	7	6	6	11	11	11
143. Furuncle.....	3	3	3	3	11	3	3	3	3	3	3	3
144. Acute abscess.....	1		1	1	1	3	1	3	3	3	3	3
145. Other diseases of the skin and anæmia.....	2	1	1	1	2	3	3	1	3	3	1	2
IX. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.												
146. Diseases of the bones (tuberculosis excepted).....	3	3	3	3	3	3	3	3	3	3	3	3
147. Diseases of the joints (tuberculosis and Rheumatism excepted).....	7	7	7	11	3	1	10	1	3	4	3	7
148. Amputations.....												
149. Other diseases of the organs of locomotion.....	1						1					

## X. MALFORMATIONS.

150.	Congenital malformations (stillbirth not included).	46	50	44	44	36	31	36	48	39	38	39	34
	A. Hydrocephalus.....	6		2		4	4	5	3	5	3	2	2
	B. Congenital malformation of the heart.....	29	33	25	28	23	18	27	32	27	25	30	29
	C. Other congenital malformations.....	11	17	17	14	9	9	4	13	7	10	7	3
	XI. EARLY HEREDITY.	168	153	105	146	160	128	170	167	148	138	147	148
151.	Congenital debility, icterus and adema.	114	102	123	105	113	89	119	118	100	88	105	92
	A. Premature birth.....	16	20	22	17	17	12	20	13	16	21	12	17
152.	Congenital debility, atrophy, marasmus, etc.												
	Other causes peculiar to early infancy.....	14	9	21	4	15	9	14	16	12	17	17	21
	A. Injuries at birth.....	24	21	29	20	14	18	15	19	19	11	13	17
	B. Other causes peculiar to early infancy.....		1			1		2	1	1	1		1
153.	Lack of care.....												
	XII. OLD AGE.	22	22	24	35	24	22	19	32	17	24	22	23
154.	Senility.....	22	22	24	35	24	22	19	32	17	24	22	23
	XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.	186	181	233	190	230	283	291	273	223	253	222	203
155.	Suicide by poison.....	17	11	14	23	15	28	16	21	20	24	21	16
156.	Suicide by asphyxia.....	2	2	1	3	2	1	1	1		1	1	1
157.	Suicide by hanging or strangulation.....	7	4	2	5	11	6	5	4	4	7	3	2
158.	Suicide by drowning.....		1	4	6	5	2	1	3	1	2	1	1
159.	Suicide by firearms.....	10	9	13	9	9	17	10	10	9	14	3	8
160.	Suicide by cutting or piercing instruments.....	2	3	3	1	2	2	3	2	2	1	1	1
161.	Suicide by jumping from high places.....					1							
162.	Suicide by crushing.....			4		1							
163.	Other suicides.....												
164.	Poisoning by food.....	1	3	4	3	4	1	7	5	6	4		1
165.	Other acute poisonings.....	5	2	8	10	5	6	10	11	7	12	3	3
166.	Confagration.....	4	1	5	1	1	1	1	1	1	6	7	3
167.	Burns (confagration excepted).....	11	12	13	13	10	9	12	7	17	10	14	20
168.	Absorption of deleterious gases (confagration excepted).....	7	6	9	5	1	4	5	4	2	13	8	10
169.	Accidental drowning.....	2	5	7	7	24	33	36	27	10	5	4	2
170.	Traumatism by firearms.....	3	2	4	4	2	1	9	9	5	7	7	10
171.	Traumatism by cutting or piercing instruments.....		4	3		2		1	2	1	1		1
172.	Traumatism by fall.....	27	37	52	27	22	30	48	42	30	35	39	45
173.	Traumatism in mines and quarries.....												
	A. Traumatism in mines.....	6	4	7	1	1	2	1	2	6	3	5	10
	B. Traumatism in quarries.....												
174.	Traumatism by machines.....	4	4	6	4	2	7	6	2	4	3	6	2

TABLE No. 2—Continued.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
175. Traumatism by other crushing												
A. Railroad accidents and injuries	27	29	28	22	34	26	21	31	35	44	32	25
B. Street car accidents and injuries	8	11	7	7	9	9	7	10	9	5	3	4
C. Automobile accidents and injuries	8	1	1	4	6	4	13	10	15	10	15	3
D. Injuries by other vehicles	1	6	5	4	7	8	11	14	16	8	15	4
E. Landslide and other crushing	13	6	3	6	6	3	5	9	2	5	5	3
176. Injuries by animals	3		6	1	8	2	0	5	2	2	6	4
177. Starvation												
178. Excessive cold	1	2	4	2								5
179. Effects of heat		1			3	29	22	7	1	1		
180. Lightning		2			2	4	4	6	3	3		
181. Electricity (lightning excepted)	1	2	3	2	4	2	3	4	3	4	3	
182. Homicide by firearms	6	11	9	11	16	8	9	15	9	11	11	7
183. Homicide by cutting or piercing instruments	1	1	3	1	3	1	1	2	1	1	2	1
184. Homicide by other means	4	2	2	3	2	4	4	5	2	4	3	3
185. Fractures (cause not specified)									1		1	
186. Other external violence	5	5	4	3	10	12	9	6	2	10	4	8
XIV. Ill-Defined Diseases.												
187. Ill-defined organic disease	2	2	1	3	2	2	2	1	3		1	3
188. Sudden death		1									1	
189. Ill-defined or nonspecified												
A. Ill-defined					1	1			1			1
B. Not specified or unknown	2	1	1	3	1	1	2	1	2			2

TABLE No. 2—Continued.

*Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Condition, for the Year Ending December 31, 1914. International Classification.*

	I. GENERAL DISEASES.																Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

TABLE No. 2.

*Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Condition, for the Year Ending December 31, 1914. International Classification.*

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
<b>I. GENERAL DISEASES.</b>												
1. Typhoid fever.....	796	818	950	948	887	748	764	747	762	785	727	799
2. Typhus fever.....	38	39	44	38	22	32	37	60	71	78	78	45
3. Relapsing fever.....	3	2	1	3	3	9	5	6	17	7	3	7
4. Malaria.....	1	1	1	1	1	1	1	1	1	1	1	2
5. Smallpox.....	10	16	24	29	28	30	7	4	1	4	6	2
6. Measles.....	18	21	40	21	4	5	4	4	6	9	9	21
7. Scarlet fever.....	27	21	41	52	50	22	33	10	7	10	9	13
8. Whooping cough.....	40	41	35	21	21	13	11	21	28	39	52	67
9. Diphtheria and croup.....	47	51	71	57	25	2	3	1	3	2	6	21
10. Influenza.....												
11. Miliary fever.....												
12. Asiatic cholera.....												
13. Cholera nostras.....	3	6	4	3	4	6	24	42	27	32	12	5
14. Dysentery.....												
15. Pague.....												
16. Yellow fever.....												
17. Leprosy.....	10	9	14	9	8	3	4	7	5	5	6	9
18. Erysipelas.....	2	1	2	2	2	1	5	1	2	2	1	1
19. Other epidemic diseases.....	4	2	6	6	3	1	5	1	6	4	5	2
20. Purulent infection and septicemia.....												
21. Glanders.....												
22. Anthrax.....												
23. Rabies.....	1	1		3	1	2	2	1	5	3	2	1
24. Tetanus.....												
25. Mycoses.....												

24. Pulmon.	294	331	336	1	333	320	278	252	251	241	228	201	1
25. Eather.	16	9	3	2	8	3	5	8	8	10	6	4	
26. Tuberculosis of the lungs.	19	10	17	17	20	26	20	14	13	16	17	17	
27. Acute military tuberculosis.													
28. Tuberculous meningitis.													
31. Abdominal tuberculosis.	5	16	21	15	21	19	14	22	26	23	14	20	
32. Pott's disease.	3	1	4	4	1	1	3	2	3	1	2	1	
33. White swellings.	1	1	3	7	13	6	3	6	1	4	1	2	
34. Tuberculosis of other organs.	0	5	5	9	4	2	3	2	6	5	6	9	
35. Dissected tuberculosis.	2	2	5	9	4	2	3	2	6	5	6	6	
36. Rickets.													
37. Syphilis.	2	2	2	1	1	2	2	1	1	2	3	2	
38. Spina.	6	2	16	13	10	10	16	14	8	18	18	18	
39. Gonococcal infection.	3	3											
40. Cancer of the buccal cavity.	14	8	6	5	8	7	12	4	8	5	5	6	
41. Cancer of the stomach, liver.	59	67	72	78	80	83	82	75	67	79	68	74	
42. Cancer of the peritoneum, intestines, rectum.	23	18	16	15	25	24	24	19	17	12	19	20	
43. Cancer of the female genital organs.	25	24	30	41	33	29	26	31	37	31	28	17	
44. Cancer of the breast.	18	11	14	18	17	22	18	16	15	16	20	10	
45. Cancer of the skin.	6	4	13	17	16	7	10	12	15	6	10	14	
46. Cancer of other organs and organs not specified.	27	30	32	28	29	23	23	33	17	18	23	27	
47. Other tumors (tumors of the female genital organs excepted).	1	1			4	1		1	1				
48. Acute articular rheumatism.	11	15	24	9	28	15	12	16	7	9	8	8	
49. Chronic rheumatism and gout.	3	3	6	2	6	6	3	2	6	5	2	3	
50. Scurvy.					1	2					1		
51. Diabetes.	33	30	31	41	35	31	34	10	27	34	27	50	
52. Exophthalmic goitre.	2	3	4	6	4	2	4	9	7	7	9	5	
53. Addison's disease.	1	2		3	3	1	3	3			2	1	
54. Leucæmia.	6	3	7	4	6	5	4	4	9	4	11	7	
55. Anæmia, chlorosis.	12	8	13	11	10	13	10	15	11	13	11	10	
56. Other general diseases.	2		2	6	2	3	2	1	3	4	1	4	
57. Alcoholism (acute or chronic).	8	9	10	4	6	7	6	5	5	7	2	16	
58. Chronic lead poisoning.									1	10		1	
59. Other chronic occupation poisonings.	1	1	1	1	3	4	1		1	2	1		
60. Other chronic poisonings.													
II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSES.	307	309	375	332	354	298	262	298	274	276	293	330	
60. Encephalitis.	1	2	6	10	4	7	6	2	2	2		2	
61. Meningitis.	6	5	8	4	5	4	5	4	8	6	4	5	
A. Simple meningitis.	1	2	2	2	1	3	2	2	1	3	2	2	
B. Cerebrospinal meningitis (undefined).	1	2	2	2	1	3	2	2	1	3	2	2	
C. Cerebrospinal fever.	5	4	11	10	20	6	4	4		3	5	7	



TABLE No. 2—Continued.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
62. Locomotor ataxia.....	6	3	9	6	2	9	12	7	5	4	8	4
63. Other diseases of the spinal cord.....	2	1	2	3	3	1	2	5	4	2	2	16
A. Acute anterior poliomyelitis.....	9	15	9	16	19	20	10	10	10	10	6	211
B. Other diseases of the spinal cord.....	198	203	242	191	192	171	156	171	163	167	192	211
64. Cerebral hæmorrhage, apoplexy.....												
65. Softening of the brain.....	3	4	11	5	7	3	3	5	6	9	5	3
66. Paralysis without specified cause.....	23	26	20	29	32	24	10	32	29	21	19	30
67. General paralysis of the insane.....	21	16	17	14	22	13	13	16	17	20	21	18
68. Other forms of mental alienation.....	4	5	4	6	4	11	10	7	8	7	7	7
69. Epilepsy.....	7	10	12	22	23	15	22	16	8	13	13	12
70. Convulsions (nonpuerperal).....												
71. Convulsions of infants.....	6	4	2	2	2	3	3	5	3	1	2	1
72. Chorea.....	1	1	1	1	1			3				
73. Neuralgia and neuritis.....	3	3	2	1	3			2		3	1	
74. Other diseases of the nervous system.....	7	4	5	4	11	5	2	3	6	4	3	9
75. Diseases of the eyes and their annexa.....												
76. Diseases of the ears.....	1	1	1	1	3	3	1	1	2	1	3	1
III. DISEASES OF THE CIRCULATORY SYSTEM.....	514	453	567	538	467	435	380	369	381	409	415	444
77. Pericarditis.....		6	5	5	6	4	3	4	4	4	4	4
78. Acute endocarditis.....	7	11	25	11	16	12	13	9	12	11	9	10
79. Organic diseases of the heart.....	400	329	404	407	333	321	272	287	281	296	291	324
80. Angina pectoris.....	33	19	43	27	26	23	17	23	14	22	34	17
81. Diseases of the arteries, atherosclerosis, aneurysm, etc.....	64	74	75	79	77	65	61	62	60	64	66	77
82. Embolism and thrombosis.....		10	10	6	7	7	13	12	7	6	7	8
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.).....		4	2	2		1	1	1	1	2	2	3
84. Diseases of the lymphatic system (lymphangitis, etc.).....			2						2	1	2	
85. Hemorrhage; other diseases of the circulatory system.....	1	1	1	1	2	2		1				1
IV. DISEASES OF THE RESPIRATORY SYSTEM.....	513	453	612	539	269	129	113	116	99	141	229	338
86. Diseases of the nasal fossæ.....			1	3		1						1
87. Diseases of the larynx.....	10	8	4	3	2			4	2	3	3	7
88. Diseases of the thyroid body.....	1	2	2	1	2	7	2	2	4	1	1	3
89. Acute bronchitis.....	17	33	41	36	22	12	7	5	4	8	10	16
90. Chronic bronchitis.....	18	15	23	22	20		14	17	12	8	19	12

91. Broncho pneumonia.	105	145	179	199	92	37	36	27	24	48	71	119
92. Pneumonia.	183	141	233	173	31	39	24	32	28	39	73	123
A. Lobar pneumonia.	100	84	98	86	37	12	10	14	13	22	36	39
B. Pneumonia (undefined).	5	6	6	4	4	6	7	3	6	1	4	6
93. Pleurisy.	4	8	5	1	4	1	2	2	2	2	4	2
94. Pulmonary congestion, pulmonary apoplexy.	9	9	10	11	4	7	7	3	2	7	6	7
95. Gangrene of the lung.	1	1	1	1	1	1	1	1	1	1	1	1
96. Asthma.	1	1	1	1	1	1	1	1	1	1	1	1
97. Pulmonary emphysema.	1	1	3	2	5	1	1	3	2	1	1	3
98. Other diseases of the respiratory system (tuberculosis excepted).	284	244	273	273	298	303	541	595	570	439	278	235
V. DISEASES OF THE DIGESTIVE SYSTEM.												
99. Diseases of the mouth and anus.	1	1	3	2	1	3	4	2	1	1	2	1
100. Diseases of the pharynx.	5	3	3	4	7	3	4	2	4	3	8	6
101. Diseases of the oesophagus.	12	7	10	6	13	5	7	3	11	6	8	9
102. Ulcer of the stomach.	39	50	49	43	50	41	65	54	49	44	34	31
103. Other diseases of the stomach (cancer excepted).	59	42	54	58	76	91	279	320	292	223	89	41
104. Diarrhoea and enteritis (under 2 years).	33	22	24	29	21	29	63	84	61	41	30	23
105. Diarrhoea and enteritis (2 years and over).	1	1	1	1	1	1	1	1	1	1	1	1
106. Ankylostomiasis.	21	25	29	21	32	35	30	29	39	24	18	30
107. Intestinal parasites.	12	10	7	14	10	6	13	8	5	9	9	6
108. Appendicitis and typhlitis.	20	14	22	25	15	25	16	23	26	24	23	15
109. Hernia, intestinal obstruction.	8	10	6	13	8	12	7	7	8	6	5	11
A. Hernia.	1	1	3	1	3	2	1	1	3	3	1	1
B. Intestinal obstruction.	38	28	27	25	26	24	29	20	31	26	19	33
110. Other diseases of the intestines.	9	13	12	12	11	17	11	12	12	2	17	9
111. Acute yellow atrophy of the liver.	19	11	16	16	21	12	15	13	25	12	15	13
112. Hydatid tumor of the liver.	1	1	1	2	2	1	1	1	1	1	1	2
113. Cirrhosis of the liver.	6	5	3	2	1	4	4	13	4	7	4	2
114. Biliary calculi.	1	4	4	1	1	1	1	2	2	3	3	2
115. Other diseases of the liver.	286	267	338	276	282	241	254	329	238	243	260	251
116. Diseases of the spleen.	23	19	26	22	21	21	20	16	23	19	29	29
117. Simple peritonitis (nonpurulent).	204	206	263	212	213	188	203	173	190	192	194	190
118. Other diseases of the digestive system (cancer and tuberculosis excepted).	4	4	3	4	1	1	3	3	6	2	6	5
119. Simple peritonitis (purulent).	1	5	3	2	2	2	1	1	1	2	4	1
120. Other diseases of the genito-urinary system (cancer and tuberculosis excepted).	286	267	338	276	282	241	254	329	238	243	260	251
121. Chyluria.	23	19	26	22	21	21	20	16	23	19	29	29
122. Other diseases of the kidneys and ureters.	204	206	263	212	213	188	203	173	190	192	194	190
123. Calculi of the urinary passages.	4	4	3	4	1	1	3	3	6	2	6	5
124. Calculi of the urinary passages.	1	5	3	2	2	2	1	1	1	2	4	1
VI. NON-VENTRAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEA.												
125. Acute nephritis.	286	267	338	276	282	241	254	329	238	243	260	251
126. Bright's disease.	23	19	26	22	21	21	20	16	23	19	29	29
127. Chyluria.	204	206	263	212	213	188	203	173	190	192	194	190
128. Other diseases of the kidneys and ureters.	4	4	3	4	1	1	3	3	6	2	6	5
129. Calculi of the urinary passages.	1	5	3	2	2	2	1	1	1	2	4	1

TABLE No. 2—Continued.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
124. Diseases of the bladder.....	9	7	11	11	11	8	9	5	.....	6	5	4
125. Diseases of the urethra, urinary abscess, etc.....	1	1	.....	.....	1	1	.....	1	.....	3	.....	.....
126. Diseases of the prostate.....	6	14	9	8	16	5	4	14	6	6	8	14
127. Nonvenereal diseases of the male genital organs.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
128. Uterine hæmorrhage (nonpuerperal).....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
129. Uterine tumor (noncancerous).....	5	1	4	5	4	6	1	4	4	4	4	1
130. Other diseases of the uterus.....	3	3	4	4	4	1	3	1	.....	1	1	2
131. Cysts and other tumors of the ovary.....	4	1	4	2	2	.....	4	5	5	5	3	2
132. Salpingitis and other diseases of the female genital organs.....	6	6	5	6	10	9	7	7	3	2	6	3
133. Nonpuerperal diseases of the breast (cancer excepted).....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....
VII. THE PUERPERAL STATE.												
134. Accidents of pregnancy.....	37	49	47	55	46	35	27	31	23	37	33	37
135. Puerperal hæmorrhage.....	3	3	3	8	8	5	4	2	2	4	4	3
136. Other accidents of labor.....	1	2	4	4	3	1	3	4	1	2	4	2
137. Puerperal septicæmia.....	5	4	3	3	2	6	.....	3	.....	3	1	1
138. Puerperal albuminuria and convulsions.....	17	25	24	24	22	10	13	14	14	17	16	24
139. Puerperal phlegmasia, alba dolens, embolus, sudden death.....	9	12	11	15	11	10	5	7	4	11	8	5
140. Following childbirth (not otherwise defined).....	.....	2	1	1	.....	2	.....	1	1	.....	.....	2
141. Puerperal diseases of the breast.....	2	1	1	1	.....	1	2	.....	.....	.....	.....	.....
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.												
142. Gangrene.....	12	3	12	5	15	14	7	6	5	11	6	6
143. Furuncle.....	8	2	8	3	11	8	3	3	2	5	4	4
144. Acute abscess.....	1	.....	3	1	1	2	1	2	1	2	.....	.....
145. Other diseases of the skin and anæura.....	1	1	1	1	1	2	2	1	2	2	1	2
IX. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.												
146. Diseases of the bones (tuberculous excepted).....	8	6	9	11	8	1	11	1	3	3	6	7
147. Diseases of the joints (tuberculous and rheumatism excepted).....	7	6	7	11	8	1	10	1	3	3	5	7
148. Amputations.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
149. Other diseases of the organs of locomotion.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....

## X. MALFORMATIONS.

150.	46	50	44	44	36	31	36	48	39	38	39	34
Congenital malformations (stillbirth not included).												
A. Hydrocephalus.	6		2	2	4	4	5	3		3	2	2
B. Congenital malformation of the heart.	29	33	25	28	23	18	27	32	5	25	30	29
C. Other congenital malformations.	11	17	17	14	9	9	4	13	7	10	7	3
151.	168	153	195	146	160	128	170	167	148	138	147	148
Congenital debility, tetanus and sclerosis.												
A. Premature birth.	114	102	123	105	113	89	119	118	100	88	105	92
B. Congenital debility, atrophy, marasmus, etc.	16	20	22	17	17	12	20	18	16	21	12	17
Other causes peculiar to early infancy.												
A. Injuries at birth.	14	9	21	4	15	9	14	16	12	17	17	21
B. Other causes peculiar to early infancy.	24	21	29	20	14	18	15	19	19	17	13	17
152.		1					2	1	1	1		1
153. Lack of care.												
154.	22	22	24	35	24	22	19	32	17	24	22	23
Senility.	22	22	24	35	24	22	19	32	17	24	22	23
155.	186	181	233	190	230	263	291	273	223	253	222	203
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.												
Suicide by poison.	17	11	14	23	15	28	16	21	20	24	21	16
Suicide by asphyxia.	2	2	1	3	2	1	1	1	1	1	1	1
Suicide by hanging or strangulation.	7	4	2	5	11	6	5	4	4	7	3	2
Suicide by drowning.	1	1	4	6	5	2	1	3	1	2	1	1
Suicide by firearms.	10	9	13	9	9	17	10	10	0	14	3	8
Suicide by cutting or piercing instruments.	2	3	3	1	2	2	3	2	2	1	1	1
Suicide by jumping from high places.					1							
Suicide by crushing.			4		1							
Other suicides.												
Forsaking by food.	1	3	4	3	4	1	7	5	6	4		1
156.	5	2	8	10	5	6	10	11	7	12	3	3
Other acute poisonings.	4	1	5	1	1	1	1		1	6	7	3
157.	11	12	13	13	10	9	12	7	17	10	14	20
Burning (conflagration excepted).	7	6	9	5	1	4	5	4	2	13	8	10
158.	2	5	7	7	24	33	36	27	10	5	4	2
Absorption of deleterious gases (conflagration excepted).												
159.	3	2	4	4	2	1	9	9	5	7	7	10
Accidental drowning.												
160.	27	37	52	27	22	30	48	42	30	35	39	45
Traumatism by firearms.												
161.	6	4	7	1	1	2	1	2	6	3	5	10
Traumatism by cutting or piercing instruments.												
162.												
163.												
164.												
165.	4	4	6	4	2	7	1	2	2	4	3	2
Traumatism by falling.												
166.												
167.												
168.												
169.												
170.												
171.												
172.												
173.												
174.												

TABLE No. 2—Continued.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
175. Traumatism by other crushing:												
A. Railroad accidents and injuries	27	29	28	22	34	26	21	31	33	44	32	25
B. Street car accidents and injuries	8	11	7	7	9	9	9	7	10	5	3	4
C. Automobile accidents and injuries	8	1	1	4	6	4	13	10	15	10	15	3
D. Injuries by other vehicles	1	6	5	4	7	8	11	14	16	8	15	4
E. Landslide and other crushing	13	6	3	6	6	3	5	9	2	5	5	3
176. Injuries by animals	3		6	1	8	2	6	5	2	2	6	4
177. Starvation												
178. Excessive cold	1	2	4	2	3	29	22	7	1	1		5
179. Effects of heat		1	1		2	4	6	3	3			
180. Lightning	1	2	3	2	4	2	3	4	3	4	3	
181. Electricity (lightning excepted)												
182. Homicide by firearms	6	11	9	11	16	8	9	15	9	11	11	7
183. Homicide by cutting or piercing instruments	1	1	1	1	2	1	2	2	1	1	2	1
184. Homicide by other means	4	2	2	3	2	4	4	5	2	4	3	3
185. Fractures (cause not specified)									1		1	
186. Other external violence	5	5	4	3	10	12	9	6	2	10	4	8
XIV. Ill-DEFINED DISEASES.												
187. Ill-defined organic disease	2	2	1	3	2	2	2	1	3		1	3
188. Sudden death		1									1	
189. Ill-defined unspecified												
A. Ill-defined					1	1	1		1			1
B. Not specified or unknown	2	1	1	3	1	1	2	1	2			2

TABLE No. 2—Continued.

*Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Condition, for the Year Ending December 31, 1914. International Classification.*

	I. GENERAL DISEASES.																		
	Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
1. Typhoid fever.....	527	262	201	114	96	1,200	374	219	400	649	642	629	544	561	511	625	653	608	677
2. Typhus fever.....	5	10	12	8	9	44	50	40	70	85	60	42	44	43	24	26	18	13	15
3. Relapsing fever.....																			
4. Malaria.....	5	2		1	2	10	3	2	1	6	1	5	4	3	1	3	3	5	1
5. Smallpox.....	3					3	1						1	1				1	
6. Measles.....	33	35	23	7	6	109	15	7	2	2	1	4	4	3	2	1			
7. Scarlet fever.....	4	15	15	7	9	50	40	10	5	1	5	1	3						
8. Whooping cough.....	164	63	21	16	8	272	26	9											
9. Diphtheria and croup.....	27	42	55	35	35	194	135	35	9	1	2	3	1			1	1		
10. Influenza.....	19	9	1	1		30	5	4	4	9	9	4	4	5	5	11	18	21	26
11. Miliary fever.....																			
12. Asiatic cholera.....																			
13. Cholera nostras.....	1	1				2						1				1	1		
14. Dysentery.....			16	7	1	24	2			1			5	4	1	5	2	10	24
15. Plague.....																			
16. Yellow fever.....																			
17. Leptosy.....																			
18. Erysipelas.....	27		1			28	1	3		3	3	2	3	3	3	5	8	5	9
19. Other epidemic diseases.....	4	2	1			7	1	1					1	2	3	3	3	3	2
20. Purulent infection and septicaemia.....	8	2	2	1		13	1	2	2	2	1	1	1	2	3	3	3	3	2
21. Glanders.....																			
22. Anthrax.....																	1		
23. Rabies.....																			
24. Tetanus.....					1	15	4	1					2						
25. Mycoses.....	14																		

TABLE No. 2—Continued.

	Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
26. Pellagra.....															1				
27. Beriberi.....																			
28. Tuberculosis of the lungs.....	44	14	13	5	10	36	22	48	224	433	442	421	298	280	199	218	199	148	160
29. Acute mitral tuberculosis.....	1	1	1	2		5	5	1	1	1	10	5	7	3	2	2	1		2
30. Tuberculosis meningitis.....	34	48	20	12	4	118	26	11	5	10	8	6	7	3	2	2	2		1
31. Abdominal tuberculosis.....	13	5	8	4	1	31	8	4	12	13	13	19	10	16	17	14	11	12	15
32. Pott's disease.....	1	1	2			4	1	3	2	2	4	1		1	2	1	2	2	
33. White swelling.....	1					1	3				1	2	3	1	1	1			
34. Tuberculosis of other organs.....	2		2	3		8		2	4	8	6	11	5	3	9	3	5	7	5
35. Disseminated tuberculosis.....	7	1				8		3	5	7	5	2	5	3	3	4	1	2	2
36. Rickets.....	0	2	1	2	1	15				1									
37. Syphilis.....	67	5	1			73	5	2	2	5	3	8	10	14	5	4	7	1	5
38. Gonococcus infection.....	1					1			1		1			1			1		
39. Cancer of the buccal cavity.....					1	1							2	6	1	9	11	10	18
40. Cancer of the stomach, liver.....					1	1		1	2	1	7	12	16	38	54	86	109	126	146
41. Cancer of the peritoneum, intestines, rectum.....																			
42. Cancer of the female genital organs.....									1	3	5	7	5	13	20	19	16	37	33
43. Cancer of the breast.....									1	4	8	18	27	34	51	40	61	35	25
44. Cancer of the skin.....								1			2	3	11	21	28	20	32	20	18
45. Cancer of other organs and organs not specified.....													1		5	10	15	9	19
46. Other tumors (tumors of the female genital organs excepted).....	1	2	3	1	2	9	1		4	1	2	6	15	11	20	34	32	38	43
47. Acute articular rheumatism.....	1					1	1			2						1		1	1
48. Chronic rheumatism and gout.....	2	1				3	9	20	15	9	7	7	6	11	7	4	8	8	7
49. Scurvy.....						1	1			5	2		1			2	2	5	6
50. Diabetes.....	2	1	2	2	3	9	1	9	12	7	16	17	13	13	14	44	37	44	49
51. Exophthalmic goitre.....																			
52. Addison's disease.....								2	3	3	5	5	7	8	2	12	3	1	7
53. Leucæmia.....	2	1			2	5	3	4	1	1	1	1	1			1	2	5	5
54. Anaemia, chlorosis.....	11					11	1	1	1	2	3	4	7	11	6	10	21	26	9
55. Other general diseases.....	8					8	5		2	3					1	4	2		2





TABLE No. 2—Continued.

	Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
IV. DISEASES OF THE RESPIRATORY SYSTEM.	813	246	85	46	22	1,212	80	46	63	41	65	59	85	79	101	137	148	217	232
86. Diseases of the nasal fossae.	2			1		3				1		3	2			1			
87. Diseases of the larynx.	9	4	3	2		18	10	2	3			3			1	1			1
88. Diseases of the thyroid body.	3					4		1	2	1	2	1	1	1	2	2	2	1	2
89. Acute bronchitis.	109	10	8	2		129	3	3				1	1	1	2	3	1	4	8
90. Chronic bronchitis.	3			1		4	2		1			3	4	5	3	6	7	17	14
91. Broncho pneumonia.	430	149	43	18	12	652	25	8	7	3	2	9	9	13	9	19	26	45	53
92. Pneumonia.																			
A. Lobar pneumonia.	130	38	20	12	6	206	27	20	34	22	41	28	45	51	64	67	66	93	93
B. Pneumonia (undefined).	117	41	8	10	4	180	9	11	13	9	10	6	18	7	12	24	24	39	44
93. Pleurisy.	2	2	3			7	2	1	2			3	4	1	2	7	4	3	6
94. Pulmonary congestion, pulmonary apoplexy.	6					6						1		1		4		2	1
95. Gangrene of the lung.										1		1	3	2	5	4	13	8	8
96. Asthma.	1					1	1	1				1	1			1		1	1
97. Pulmonary emphysema.																			
98. Other diseases of the respiratory system (tuberculosis excepted).	1					1			1	1		1	1	1	2	1	3	4	1
V. DISEASES OF THE DIGESTIVE SYSTEM.	1,496	485	166	40	24	2,211	90	79	64	63	82	110	86	122	129	168	147	177	176
99. Diseases of the mouth and anæxia.	8					2	10	2		1									1
100. Diseases of the pharynx.	7	1	3	2	1	14	8	5	3	4	4	4		2	1	2			1
101. Diseases of the œsophagus.				1		1									2				
102. Ulcer of the stomach.		1	1			2	1	1	2	3	4	5	3	6	9	4	9	16	12
103. Other diseases of the stomach (cancer excepted).	212	30	17	9	3	271	12		5	7	5	7	6	7	13	20	9	24	26
104. Diarrhoea and enteritis (under 2 years).	1,200	427				1,627													
105. Diarrhoea and enteritis (2 years and over).			133	20	6	159	17	10	2	6	6	10	9	15	11	10	19	16	25
106. Akylocholoma.																			
107. Intestinal parasites.	2		1			3			1										1
108. Appendicitis and typhilitis.	2	1	1	1	5	10	31	48	29	29	33	41	21	18	21	17	7	8	6

109. Hernia, intestinal obstruction.....	6	1	5	5	4	7	1	1	3	3	3	6	7	11	8	14	9
A. Hernia.....	40	14	5	5	4	68	8	6	2	13	11	12	12	14	10	15	12
B. Intestinal obstruction.....	7	5	1	2	15	3	3	1	1	4	3	7	1	7	9	6	5
110. Other diseases of the intestines.....	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	4	1
111. Acute yellow atrophy of the liver.....																	
112. Hydatid tumor of the liver.....																	
113. Carcinoma of the liver.....																	
114. Biliary calculi.....																	
115. Other diseases of the liver.....	7	1	2		2	12	3	4	1	4	2	6	12	15	17	15	11
116. Diseases of the spleen.....																	
117. Simple peritonitis (nonpuerperal).....	6	2	1	1	1	10	2	4	2	3	3	1	2	8	3	3	1
118. Other diseases of the digestive system (cancer and tuberculosis excepted).....			1			1			1	1	1			1	3	1	1
VI. NONVEREAL DISEASES OF THE GENITO URINARY SYSTEM AND ANNEXA.....	26	12	7	5	6	56	20	17	29	51	84	149	114	200	256	293	376
119. Acute nephritis.....	15	6	6	3	4	34	10	7	9	10	8	18	9	15	25	16	18
120. Bright's disease.....	4	4	1	2	1	12	10	10	15	16	27	55	80	164	213	249	317
121. Chyluria.....						4				1	2	3	1	2	2	3	7
122. Other diseases of the kidneys and annexa.....	4								1	1	2	2	1	1	2	1	4
123. Calculi of the urinary passages.....																	
124. Diseases of the bladder.....	3	1			1	5				1	2	2	2	2	5	3	13
125. Disease of the urethra, urinary abscess, etc.....												1	1	1	1	1	1
126. Diseases of the prostate.....										1		1	1	2	1	11	14
127. Nonverrebral diseases of the male genital organs.....																	
128. Uterine haemorrhage (nonpuerperal).....																	
129. Uterine tumor (non-cancerous).....																	
130. Other diseases of the uterus.....																	
131. Cysts and other tumors of the ovary.....										3	2	4	8	2	2	5	1
132. Salpingitis and other diseases of the fe- male genital organs.....										4	1	1	3	6	5	4	1
133. Nonpuerperal diseases of the breast (cancer excepted).....	1					1			2	15	13	16	10	5	6	2	
VII. THE PUERPERAL STATE.....																	
134. Accidents of pregnancy.....									56	126	88	78	77	23	6	2	
135. Puerperal haemorrhage.....																	
136. Other accidents of labor.....										1	17	12	7	8	3	1	
137. Puerperal septicaemia.....											5	6	7	1	10	2	
138. Puerperal albuminuria and convulsions.....											4	2	10	5	4	1	
											29	66	51	33	29	10	1
											15	30	15	19	24	3	1

TABLE No. 2—Continued.

	Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
139. Puerperal phlegmasia, alba dolens, embolus sudden death.									1	1		5		1	1				
140. Following childbirth (not otherwise defined).									1	2	1	3	1		1				
141. Puerperal diseases of the breast.																			
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.	12	2				14	2	1	1	3	2	1	2	4	3	4	7	5	8
142. Gangrene.	1	1				1	2							2	1	1	3	4	6
143. Furuncle.	4	1				5			1	1	1	1	1	1	1	3	2	1	1
144. Acute abscess.	7					7		1			1	1					2		1
145. Other diseases of the skin and annexa.														1					
IX. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.	4	1	1	3	4	13	3	7	5	5	2	3		3	2	4	5	6	5
146. Diseases of the bones (tuberculosis excepted).	4	1	1	3	4	13	3	6	4	5	2	3		3	2	4	5	6	4
147. Diseases of the joints (tuberculosis and rheumatism excepted).								1					1						1
148. Amputations.								1											
149. Other diseases of the organs of locomotion.																			
X. MALFORMATIONS.	465	7	3	2	2	479	5	1											
150. Congenital malformations (stillbirth not included).																			
A. Hydrocephalus.	30	2	2	1		35	2	1											
B. Congenital malformation of the heart.	316	5	1	1	1	324	2												
C. Other congenital malformations.	119				1	120	1												
XI. EARLY HISTORY.	1,868					1,868													
151. Congenital debility, icterus, and sclerema.																			
A. Premature birth.	1,268					1,268													
B. Congenital debility, atrophy, marasmus, etc.	203					203													

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TABLE No. 2—Continued.

	Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
175. Injuries by animals.		1	1	1		3	4	3	3		2	2	3	1	1		4	5	8
177. Starvation.						1	1								2	1		1	3
178. Excessive cold.	1				1	8		2	1	2	2	3	7	2	4	3	1	9	3
179. Effects of heat.	7	1				2	1				4			2	1		2	1	2
180. Lightning.																			
181. Electricity (lightning excepted).							1	1	2	5	3	5	5	5	1	1	1	1	1
182. Homicide by firearms.						1	1	4	5	15	27	21	12	9	14	7	5	2	1
183. Homicide by cutting or piercing instruments.	1																		
184. Homicide by other means.	2					1		1	1	1	2	6	4	2					
185. Fractures (cause not specified).						2			1	2	3	7	5	6	3	1	3	2	
186. Other external violence.	5	3	2	4		14	6	6	4	2	4	7	2	1	4	4	3	5	5
XIV. Ill-DEFINED DISEASES.																			
187. Ill-defined organic disease.	9	1				10			1		1	1		1				1	1
188. Sudden death.																			
189. Ill-defined or nonspecified.																			
A. Ill-defined.		1				1					1			1					
B. Not specified or unknown.	9					9			1			1						1	1

TABLE No. 2—Continued.

Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Condition, for the Year Ending December 31, 1914. International Classification.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non- res.
I. GENERAL DISEASES.	586	436	276	99	31	7	4	9,352	379	9,135	585	11	9,537	4,452	1,722	20	9,731	...
1. Typhoid fever.	10	3	3	1	...	...	...	575	16	570	21	...	311	254	25	1	591	22
2. Typhus fever.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. Relapsing fever.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. Malaria.	7	3	6	1	1	...	...	63	3	64	2	...	24	24	16	...	66	1
5. Smallpox.	...	...	...	...	...	...	...	8	...	8	...	...	5	2	1	...	8	...
6. Measles.	...	...	...	...	...	...	...	145	6	151	...	...	137	12	2	...	151	...
7. Scarlet fever.	...	...	...	...	...	...	...	114	...	114	...	...	105	19	...	...	114	...
8. Whooping cough.	...	...	...	...	...	...	...	282	13	295	...	...	294	1	...	...	295	...
9. Diphtheria and croup.	3	...	...	...	...	...	...	384	1	384	1	...	376	8	...	...	385	1
10. Influenza.	30	44	42	16	4	1	...	287	5	266	24	2	61	119	111	1	292	2
11. Miliary fever.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12. Asiatic cholera.	...	...	...	...	...	...	...	10	...	8	3	...	2	3	5	...	10	3
13. Cholera nostras.	15	28	24	16	5	2	...	167	1	152	15	1	33	52	82	1	168	3
14. Dysentery.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15. Plague.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16. Yellow fever.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17. Leprosy.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18. Erysipelas.	3	2	4	1	3	...	...	88	1	87	2	...	38	33	18	...	89	3
19. Other epidemic diseases.	...	...	...	...	...	...	...	10	10	10	...	...	9	9	...	...	10	...
20. Purulent infection and septemia.	2	...	1	2	...	1	...	45	44	44	1	...	18	17	9	1	45	1
21. Glanders.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22. Anthrax.	...	...	...	...	...	...	...	1	...	1	...	...	...	1	...	...	1	...
23. Rabies.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24. Tetanus.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25. Mycoses.	...	...	...	...	...	...	...	22	...	22	...	...	20	2	...	...	22	2

TABLE No. 2—Continued.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non-res- dents.
26. Pellagra.....								2		2				2			2	1
27. Beriberi.....								2										
28. Tuberculosis of the lungs.....	128	67	33	5	4		2	3,170	235	3,194	208	3	1,175	1,738	487	7	3,405	103
29. Acute miliary tuberculosis.....	2		1					30	29	66			30	29	7		66	6
30. Tuberculosis meningitis.....	1							185	7	190	3		175	25	2		202	6
31. Abdominal tuberculosis.....																		
32. Pott's disease.....	11	6	1		2		1	194	22	207	9		92	89	34	1	216	7
33. White swelling.....	2	1	2					27	1	28			13	12	3		28	
34. Tuberculosis of other organs.....	5	5	3					18	1	19			11	4	4		19	
35. Disseminated tuberculosis.....	1	1						86	3	88	1		28	48	13		89	5
36. Rickets.....								50	2	50	2		25	20	6	1	52	3
37. Syphilis.....										18			16		2		18	
38. Gonococcus infection.....	4	1	2					140	12	148	3	1	99	37	15	1	152	6
39. Cancer of the buccal cavity.....	10	9	9	1	1			87	1	80	8		3	2			6	
40. Cancer of the stomach, liver.....	141	87	49	8				874	10	776	103		58	552	272	2	884	36
41. Cancer of the peritoneum, intestines, rectum.....	33	22	13	4		1		230	2	203	29		19	133	80		232	11
42. Cancer of the female genital organs.....	19	22	7					347	5	329	22	1	27	229	95	1	352	12
43. Cancer of the breast.....	16	19	1	6		1		197	1	187	11		24	115	59		198	4
44. Cancer of the skin.....	19	19	19	9	4			129	1	115	14	1	13	64	63		130	4
45. Cancer of other organs and organs not specified.....	35	25	21	10	2			301	8	280	29		37	191	81		309	24
46. Other tumors (tumors of the female genital organs excepted).....	1							9		9			3	6			9	1
47. Acute articular rheumatism.....	15	14	5	5	2			158	4	157	5		66	70	26		162	5
48. Chronic rheumatism and gout.....	2	7	4	3				45	1	44	2	2	9	20	17		46	
49. Scurvy.....								3		3	1		3	1				
50. Diabetes.....	45	30	19	4	1			387	5	359	32	1	08	226	97	1	392	10
51. Exophthalmic goitre.....	2	2						61	1	61	1		14	42	6		62	4
52. Addison's disease.....	3	1						16		15	1		2	13	1		16	
53. Leucæmia.....	3	3	1					60		54	6		17	35	8		60	1
54. Anæmia, chlorosis.....	10	6	3	3	1	1		137		125	12		21	94	22		137	1
55. Other general diseases.....	1	1		2				29	1	28	2		17	11			30	

56. Alcoholism (acute or chronic).....	7	3					95	4	02	6	1	32	41	25	1	99	8
57. Chronic lead poisoning.....							3		1	2			2	1		3	1
58. Other chronic occupation poisonings.....																	
59. Other chronic poisonings.....	1	3					14	2	16			1	11	4		16	
II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSES.	504	444	370	168	40	9	3	3,625	*82	3,369	333	6	746	1,717	1,232	13	3,708
60. Encephalitis.....	1	1	3					44	42	2		23	19	2		44	2
61. Meningitis.....	1	1	1					64	62	2		46	12	6		64	1
A. Simple meningitis.....								17	17			12	3	2		17	
B. Cerebrospinal meningitis (undefined).....								73	8	78	3	74	7			81	
C. Cerebrospinal fever.....																	
62. Locomotor ataxia.....	6	7	1	1				74	1	74	1	16	40	19		75	
63. Other diseases of the spinal cord.....								27	27								
A. Acute anterior poliomyelitis.....	10	14	12	4				144	*7	134	17	1	27	82	42	1	152
B. Other diseases of the spinal cord.....	337	332	259	122	30	5	2	2,216	39	2,022	232	3	207	1,153	857	10	2,357
64. Cerebral hemorrhage, apoplexy.....								62	2	58	6		4	34	28		64
65. Softening of the brain.....	10	13	11	4	4			290	5	285			30	177	138		293
66. Paralysis without specified cause.....	51	41	61	22	5	3	1	197	11	186	27	1	80	172	96		268
67. General paralysis of the insane.....	17	23	17	3	1			180		168	12		24	45			180
68. Other forms of mental alienation.....	6	2	1			1		167	6	161	6		119	37	17		173
69. Epilepsy.....	3	4	1														36
70. Convulsions (nonpuerperal).....																	
71. Convulsions of infants.....								33	1	34		34				34	
72. Chorea.....		1						7		7				2			7
73. Neuritis and neuritis.....	1	1	2					18		18		6	8			18	1
74. Other diseases of the nervous system.....	5	4	1	2				62	1	61	2	23	29	11		63	3
75. Diseases of the eyes and their annexa.....	1							4		4							
76. Diseases of the ears.....								43	1	44		36	7	1		44	
III. DISEASES OF THE CIRCULATORY SYSTEM.	868	794	634	288	83	16	2	5,203	166	4,784	576	9	573	12,720	2,057	19	5,369
77. Pericarditis.....	6	2	3	1				46	3	47	2		22	16	11		49
78. Acute endocarditis.....	6	2	5	3				136	10	141			53	73	20		146
79. Organic diseases of the heart.....	632	579	409	182	48	7	2	3,781	134	3,518	392	5	392	2,074	1,444	5	3,915
80. Angina pectoris.....	54	41	31	5	2			295	3	270	27	1	22	176	93	7	298
81. Diseases of the arteries, arteriosclerosis, aneurysm, etc.....	152	159	175	91	33	9		812	12	690	131	3	64	310	443	7	824
82. Embolism and thrombosis.....	11	9	10	4				100	2	91	11	10	57	35		102	2
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.).....	4	2		2				17	2	12	7	1	9	9		19	1
84. Diseases of the lymphatic system (lymphangitis, etc.).....								7		7		6	1			7	
85. Hæmorrhage; other diseases of the circulatory system.....	3		1					9		8	1	3	4	2		9	



TABLE No. 2—Continued.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and over.	Unknown.	White	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non- residents.
<b>IV. DISEASES OF THE RESPIRATORY SYSTEM.</b>																		
86. Diseases of the nasal fossae.	264	257	248	143	59	13	2	3,431	120	3,270	279	2	1,642	1,039	866	4	3,551	...
87. Diseases of the larynx.								6									6	...
88. Diseases of the thyroid body.	2	1	1	1	1			45	1	45	1		37	2	2		46	...
89. Acute bronchitis.	10	16	9	13	6	1		21	5	197	14		10	9	4		23	...
90. Chronic bronchitis.	28	36	38	16	11	2		206	5	165	32		140	22	49		211	2
								192	5	165	32		18	80	99		197	...
91. Broncho pneumonia.	60	66	76	41	13	5	1	1,105	37	1,003	79		728	192	222		1,142	19
92. Pneumonia.																		...
A. Lobar pneumonia.	97	91	68	37	14	3	1	1,115	53	1,079	88	1	414	474	278	2	1,168	28
B. Pneumonia (undefined).	40	27	39	24	12	2		539	11	516	33	1	243	167	138	2	550	7
93. Pleurisy.		3	5					51	2	47	6		15	27	11		53	1
94. Pulmonary congestion, pulmonary apoplexy.	5	1	10	4	2			36	1	36	1		12	6	19		37	3
95. Gangrene of the lung.	2							4		4			1	3			4	...
96. Asthma.	15	10	6	2				78	4	66	16		15	39	28		82	2
97. Pulmonary emphysema.	1		1	1				8		7	1		2	2	4		8	...
98. Other diseases of the respiratory system (tuberculosis excepted).	1	4		2				24		18	6		4	8	12		24	...
<b>V. DISEASES OF THE DIGESTIVE SYSTEM.</b>																		
99. Diseases of the mouth and anæmia.	214	189	129	65	26	5	1	4,226	107	4,107	224	2	2,652	1,073	603	5	4,333	...
100. Diseases of the pharynx.								14		14			13	1			14	...
101. Diseases of the œsophagus.	2			2				51	1	51	1		38	11	3		52	...
102. Ulcer of the stomach.	7	7	6	2	1			98	2	96	10		10	50	31		100	9
103. Other diseases of the stomach (cancer excepted).	43	36	31	17	8	2		533	16	523	24		312	120	116	1	549	7
104. Diarrhoea and enteritis (under 2 years).								1,584	43	1,627	28		1,627	132	114	1	1,627	1
105. Diarrhoea and enteritis (2 years and over).	32	42	36	22	10	3		447	13	431			213	132	114	1	460	16
106. Acute dysentery.								5		5								...
107. Intestinal parasites.								5		5								...
108. Appendicitis and typhitis.	7	1	4		1		1	329	4	314	18	1	4	149	22	3	333	47



TABLE No. 2—Continued.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non- res.
139. Puerperal ptychiasis, alba dolens, embolus, sudden death.								9		9				9			0	0
140. Following childbirth (not otherwise defined).								9		9				9			9	1
141. Puerperal diseases of the breast.																		
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.	12	8	18	4	2		1	101	1	93	8	1	27	42	32	1	102	
142. Gangrene.								61		54	7		5	30	26		61	2
143. Furuncle.	10	8	17	3	2		1	14		12	1	1	3	9	1	1	14	
144. Acute abscess.	1			1				13		13			8	3	2		13	1
145. Other diseases of the skin and adnexa.	1		1					13	1	14			11		3		14	1
IX. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.																		
146. Diseases of the bones (tuberculosis excepted).	2	6	1	1	1			72	2	73	1		35	27	12		74	
147. Diseases of the joints (tuberculosis and rheumatism excepted).	2	4	1	1	1			67	2	69			33	26	10		69	8
148. Amputations.								2		1	1		1		1		2	
149. Other diseases of the organs of locomotion.	2							3		3			1	1			3	
X. MALFORMATIONS.																		
150. Congenital malformations (stillbirths not included).								480	5	485			485				485	
A. Hydrocephalus.								38		38			38				38	
B. Congenital malformations of the heart.								322	4	326			326				326	
C. Other congenital malformations.								120	1	121			121				121	
XI. EARLY HISTORY.																		
151. Congenital debility, icterus and sclerema.								1,826	42	1,868			1,868				1,868	
A. Premature birth.								1,246	22	1,268			1,268				1,268	
B. Congenital debility, atrophy, marasmus, etc.								196	7	203			203				203	1
152. Other causes peculiar to early infancy.								165		165			165				165	
A. Injuries at birth.								212	8	220			220				220	
B. Other causes peculiar to early infancy.								7	1	8			8				8	
153. Lack of care.																		

## XII. Old Age.

154. Senility.....	25	33	78	73	46	11	283	4	246	39	1	16	56	212	2	286	.....
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.	110	124	101	50	23	6	10 2,673	174	2,362	355	31	1,022	1,184	479	63	2,748	.....
155. Suicide by poison.....	7	1	1	.....	.....	.....	221	5	213	12	1	69	118	36	3	296	.....
156. Suicide by asphyxia.....	1	1	.....	.....	.....	.....	14	.....	12	2	.....	1	11	2	.....	14	.....
157. Suicide by hanging or strangulation.....	5	1	3	1	.....	.....	69	1	52	8	.....	7	88	14	1	60	3
158. Suicide by drowning.....	1	2	2	.....	.....	.....	26	.....	1	24	3	5	14	8	.....	27	.....
159. Suicide by firearms.....	1	2	1	.....	.....	.....	119	2	106	11	1	39	62	19	1	121	.....
160. Suicide by cutting or piercing instruments.....	1	1	.....	.....	1	.....	23	.....	16	7	.....	8	11	4	.....	23	.....
161. Suicide by jumping from high places.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	1	.....	.....	.....	1	.....
162. Suicide by crushing.....	.....	.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	6	.....
163. Other suicides.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
164. Poisoning by food.....	.....	2	.....	1	.....	.....	38	1	37	2	.....	24	13	2	.....	39	.....
165. Other acute poisonings.....	3	1	1	.....	.....	.....	80	2	80	2	.....	58	22	2	.....	82	.....
166. Confagration.....	1	1	.....	.....	.....	.....	30	1	29	1	.....	13	8	7	.....	31	.....
167. Burns (confagration excepted).....	8	5	.....	1	.....	.....	147	1	141	7	.....	94	36	16	2	148	1
168. Absorption of deleterious gases (confagration excepted).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
169. Accidental drowning.....	2	4	1	2	1	.....	74	.....	69	5	.....	54	17	2	.....	74	1
170. Traumatism by firearms.....	1	2	.....	.....	.....	.....	156	6	148	12	2	113	30	15	4	162	.....
171. Traumatism by cutting or piercing instruments.....	2	1	.....	.....	.....	.....	61	2	58	4	1	37	20	5	1	63	.....
172. Traumatism by fall.....	35	71	75	41	21	4	15	.....	14	1	.....	5	8	2	.....	15	.....
173. Traumatism in mines.....	.....	.....	.....	.....	.....	.....	480	4	377	57	.....	74	149	205	6	484	3
A. Traumatism in quarries.....	1	.....	.....	.....	.....	.....	47	1	35	12	1	11	32	6	.....	48	.....
B. Traumatism in quarries.....	.....	.....	.....	.....	.....	.....	2	.....	.....	1	.....	1	.....	.....	.....	2	.....
174. Traumatism by machines.....	1	1	.....	1	.....	.....	48	2	43	7	.....	16	33	1	.....	50	.....
175. Traumatism by other crushing.....	12	4	4	.....	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A. Railroad accidents and injuries.....	3	5	.....	.....	.....	.....	346	8	227	112	15	110	179	32	33	354	.....
B. Street car accidents and injuries.....	4	3	.....	.....	.....	.....	80	1	80	8	1	28	47	13	1	89	.....
C. Automobile accidents and injuries.....	3	3	.....	1	.....	.....	89	1	84	6	.....	40	44	5	1	90	.....
D. Injuries by other vehicles.....	2	3	5	1	.....	.....	33	.....	88	5	.....	37	44	12	.....	93	2
E. Landslide and other crushing.....	2	1	.....	.....	.....	.....	64	11	59	9	.....	27	30	9	.....	66	.....
176. Injuries by animals.....	3	2	1	.....	.....	.....	45	.....	37	6	.....	18	23	4	.....	45	.....
177. Starvation.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
178. Excessive cold.....	1	2	.....	.....	.....	.....	13	1	12	1	.....	4	.....	4	1	14	.....
179. Effects of heat.....	9	4	2	2	.....	.....	60	4	52	12	.....	20	28	16	.....	64	.....
180. Lightning.....	1	1	.....	.....	.....	.....	18	.....	14	4	.....	5	10	2	1	18	.....
181. Electricity (lightning excepted).....	.....	.....	.....	.....	.....	.....	31	.....	29	2	.....	11	19	1	.....	31	.....
182. Homicide by firearms.....	.....	.....	.....	.....	.....	.....	105	18	106	15	2	29	73	19	2	123	.....

TABLE No. 2—Continued.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown	White	Colored.	American.	Foreign.	Not Reported	Single.	Married.	Widowed or Divorced	Not Reported	Total	Non-res- dents.
139. Puerperal phlebotomy, alba dolens, embolus, sudden death.								9		9				9			0	
140. Following childbirth (not otherwise defined)								9		9				9			9	1
141. Puerperal diseases of the breast.																		
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.	12	8	13	4	2		1	101	1	93	8	1	27	42	32	1	102	
142. Gangrene.																		
143. Furuncle.	10	8	17	3	2		1	61		54	7		5	30	26		61	2
144. Acute abscess.	1							14		12	1		3	9	1	1	14	
145. Other diseases of the skin and adnexa.	1		1					13		13			8	3	2		13	1
								13		14			11		3		14	1
IX. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.	2	6	1	1	1			72	2	73	1		35	27	12		74	
146. Diseases of the bones (tuberculosis excepted).	2	4	1	1	1			67	2	69			33	26	10		69	8
147. Diseases of the joints (tuberculosis and rheumatism excepted).											1		1		1		2	
148. Amputations.								2										
149. Other diseases of the organs of locomotion.		2						3		3			1	1			3	
X. MALFORMATIONS.																		
150. Congenital malformations (stillbirths not included).								480	5	485			485				485	
A. Hydrocephalus.								38		38			38				38	
B. Congenital malformations of the heart.								322	4	326			326				326	
C. Other congenital malformations.								120	1	121			121				121	
XI. EARLY HISTORY.																		
151. Congenital debility, icterus and sclerema.								1,326	42	1,368			1,368				1,368	
A. Premature birth.								1,246	22	1,268			1,268				1,268	
B. Congenital debility, atrophy, marasmus, etc.								196	7	203			203				203	1
152. Other causes peculiar to early infancy.								165	4	169			169				169	
A. Injuries at birth.								212	8	220			220				220	
B. Other causes peculiar to early infancy.								212	8	220			220				220	
153. Lack of care.								7	1	8			8				8	

## XII. OLD AGE.

154. Senility.....	25	33	78	73	46	11	283	4	246	39	1	16	56	212	2	296	.....
	25	33	78	73	46	11	283	4	246	39	1	16	56	212	2	296	8
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.	110	124	101	50	23	6	10	2,673	174	2,362	355	31	1,022	1,184	479	63	2,748
155. Suicide by poison.....	7	1	1	.....	.....	.....	221	6	213	12	1	69	118	36	3	226	.....
156. Suicide by asphyxia.....	1	1	.....	.....	.....	.....	14	.....	.....	2	.....	.....	11	2	.....	14	.....
157. Suicide by hanging or strangulation.....	5	1	3	1	.....	.....	59	1	52	8	.....	7	38	14	1	60	2
158. Suicide by drowning.....	1	2	2	.....	.....	.....	26	1	24	3	.....	5	14	8	.....	37	.....
159. Suicide by firearms.....	1	2	1	.....	.....	.....	119	2	109	11	1	39	62	19	1	121	.....
160. Suicide by cutting or piercing instruments.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
161. Suicide by jumping from high places.....	.....	.....	.....	.....	1	.....	23	.....	16	7	.....	8	11	4	.....	23	.....
162. Suicide by crushing.....	.....	.....	.....	.....	.....	.....	1	.....	1	1	.....	1	1	.....	1	5	.....
163. Other suicides.....	.....	.....	.....	.....	.....	.....	5	.....	1	4	.....	3	.....	1	1	5	.....
164. Poisoning by food.....	2	.....	.....	1	.....	.....	38	1	37	2	.....	24	13	2	.....	39	.....
165. Other acute poisonings.....	3	1	1	.....	.....	.....	80	2	80	2	.....	58	22	2	.....	82	.....
166. Confagration.....	1	1	.....	.....	.....	.....	30	1	29	1	.....	15	9	7	.....	31	.....
167. Burns (confagration excepted).....	8	5	.....	1	.....	.....	147	1	141	7	.....	94	36	16	2	148	1
168. Absorption of deleterious gases (confagration excepted).....	.....	.....	.....	.....	.....	.....	74	.....	69	5	.....	54	17	3	.....	74	1
169. Accidental drowning.....	2	4	1	.....	1	.....	156	6	148	12	2	113	30	15	4	162	.....
170. Traumatism by firearms.....	1	2	.....	.....	.....	.....	61	2	58	4	.....	37	20	5	1	63	.....
171. Traumatism by cutting or piercing instruments.....	2	1	1	.....	.....	.....	15	.....	14	1	.....	5	8	2	.....	15	.....
172. Traumatism by fall.....	35	71	75	41	21	4	430	4	377	57	.....	74	149	205	6	434	8
173. Traumatism in mines and quarries.....	1	.....	.....	.....	.....	.....	47	1	35	12	1	11	32	5	.....	48	.....
A. Traumatism in mines.....	.....	.....	.....	.....	.....	.....	2	.....	1	1	.....	1	1	.....	.....	2	.....
B. Traumatism in quarries.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
174. Traumatism by machines.....	1	1	.....	1	.....	.....	48	2	43	7	.....	16	33	1	.....	50	.....
175. Traumatism by other crushing.....	12	4	4	.....	.....	.....	346	8	227	112	.....	110	179	22	33	354	.....
A. Railroad accidents and injuries.....	3	5	.....	.....	.....	7	88	1	80	8	.....	23	47	13	1	89	.....
B. Street car accidents and injuries.....	4	3	.....	.....	.....	.....	89	1	84	6	.....	40	44	5	1	90	.....
C. Automobile accidents and injuries.....	2	3	5	1	.....	.....	93	.....	88	5	.....	37	44	12	.....	93	2
D. Injuries by other vehicles.....	2	1	.....	.....	.....	.....	64	11	57	9	.....	27	30	9	.....	66	.....
E. Landslide and other crushing.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
176. Injuries by animals.....	3	2	1	.....	.....	.....	45	.....	39	6	.....	18	23	4	.....	45	.....
177. Starvation.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
178. Excessive cold.....	1	2	.....	.....	.....	.....	13	1	12	1	.....	.....	5	4	1	14	.....
179. Effects of heat.....	9	4	2	2	.....	1	69	4	64	12	.....	20	28	16	.....	64	.....
180. Lightning.....	1	1	.....	.....	.....	.....	31	.....	14	.....	.....	10	10	2	1	21	.....
181. Electricity (lightning excepted).....	.....	.....	.....	.....	.....	.....	18	.....	29	2	.....	11	19	1	.....	31	.....
182. Homicide by firearms.....	.....	.....	.....	.....	.....	.....	101	18	106	15	2	29	73	19	2	123	.....

TABLE No. 2—Continued.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non-re- sents.
183. Homicide by cutting or piercing instruments...							1	15	4	15	4		7	10	2		19	
184. Homicide by other means...			1					31	5	28	7	1	13	17	5	1	36	1
185. Fractures (cause not specified)...								2				2				2	2	
186. Other external violence...	3	3	1	1				76	2	70	6	2	37	31	8	2	78	5
XIV. IL-DARRUD DUMALAS.																		
187. Ill-defined organic disease...	1	3			2			21	1	19	3		12	6	4		23	
188. Sudden death...		1			1			2		1	1				2		2	
189. Ill-defined or unspecified...																		
A. Ill-defined...	1							4		4			2	2			4	
B. Not specified or unknown...		2			1			15	1	14	2		10	4	2		16	

• 1 Indian. † 1 Chinese.

TABLE No. 3.

*Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, for Year 1914.*

COUNTIES.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Adams.....	Total.....	18	19	22	12	13	14	23	28	17	11	12	21
	Males.....	9	9	10	12	6	5	10	16	9	8	9	11
	Females.....	9	9	10	5	7	9	13	12	8	3	3	10
Allen.....	Total.....	88	99	114	98	91	88	84	100	84	104	73	106
	Males.....	49	57	56	62	45	52	47	57	51	58	37	62
	Females.....	39	42	58	37	46	36	37	43	33	46	36	44
Bartholomew.....	Total.....	23	23	54	35	31	17	28	23	25	21	35	19
	Males.....	11	11	28	17	17	10	17	10	10	11	21	12
	Females.....	11	12	26	18	14	7	11	13	15	10	14	7
Benton.....	Total.....	12	13	5	11	11	9	9	13	10	6	8	12
	Males.....	7	7	2	7	4	4	3	9	5	3	5	8
	Females.....	5	6	3	4	7	5	6	4	5	3	3	4
Blackford.....	Total.....	13	18	15	20	14	12	11	17	21	17	19	16
	Males.....	6	6	7	11	6	7	6	9	12	9	10	11
	Females.....	8	12	8	9	8	5	5	8	9	8	9	5
Boone.....	Total.....	36	21	30	25	26	23	29	21	24	27	17	20
	Males.....	17	9	15	11	11	15	14	13	10	12	7	11
	Females.....	19	12	15	14	15	8	15	8	14	15	10	9
Brown.....	Total.....	9	11	9	8	4	3	8	5	7	6	3	8
	Males.....	3	7	2	5	1	2	2	4	.....	4	1	2
	Females.....	6	4	7	3	3	6	6	1	7	2	2	6
Carroll.....	Total.....	20	26	23	13	13	15	13	24	16	16	16	13
	Males.....	15	11	9	9	6	10	7	9	8	9	11	7
	Females.....	5	15	14	7	7	5	6	15	8	7	5	6
Cass.....	Total.....	54	46	55	56	64	41	45	40	46	54	50	34
	Males.....	23	29	26	31	40	18	24	25	26	34	30	16
	Females.....	31	17	29	25	24	23	21	15	20	20	20	18



TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Clark.....	Total.....	40	29	42	47	41	32	39	30	23	25	30	34
	Males.....	20	19	29	29	16	13	13	16	4	12	12	23
	Females.....	20	10	22	18	25	19	20	14	19	13	18	11
Clay.....	Total.....	31	28	32	44	35	34	27	38	30	25	28	41
	Males.....	12	15	16	23	21	19	12	16	15	15	18	20
	Females.....	19	13	16	21	14	15	15	22	15	10	10	21
Clinton.....	Total.....	37	30	23	25	26	25	29	31	21	24	27	43
	Males.....	19	20	11	11	12	14	16	17	10	15	14	18
	Females.....	18	10	12	14	14	11	13	14	11	9	13	25
Crawford.....	Total.....	7	10	17	14	12	6	9	7	8	6	8	6
	Males.....	4	5	10	11	8	1	3	7	6	3	5	2
	Females.....	3	5	7	3	4	5	6	.....	2	3	3	3
Davies.....	Total.....	20	26	37	26	31	21	26	22	24	23	23	16
	Males.....	14	15	18	12	15	12	16	13	13	14	9	9
	Females.....	6	11	19	14	16	9	10	9	11	12	14	7
Dearborn.....	Total.....	21	21	28	33	22	27	24	24	17	19	20	19
	Males.....	10	10	14	17	12	15	9	14	5	11	12	11
	Females.....	11	11	14	16	10	12	15	10	12	8	8	8
Deatur.....	Total.....	13	14	23	28	31	15	18	29	23	21	20	27
	Males.....	8	8	14	14	22	10	12	11	11	12	13	17
	Females.....	5	6	9	14	9	5	6	18	11	13	7	10
Detailb.....	Total.....	22	22	37	33	31	20	24	20	24	16	14	22
	Males.....	11	14	22	16	13	9	14	11	16	10	7	12
	Females.....	11	8	15	17	18	11	10	9	8	6	7	10
Delaware.....	Total.....	51	52	68	72	52	51	37	52	55	49	45	53
	Males.....	31	24	32	35	26	28	24	18	29	22	20	29
	Females.....	20	28	36	34	26	23	13	34	26	27	15	27
Dubois.....	Total.....	16	10	22	15	13	16	15	24	10	11	15	17
	Males.....	6	7	9	7	9	7	7	13	4	7	7	9
	Females.....	10	3	13	8	4	9	8	11	6	4	8	8

Elbert.....	67	64	56	70	58	40	43	47	45	45	63	63
Total.....	34	31	27	44	36	32	21	25	17	17	33	33
Males.....	33	23	29	26	32	18	22	32	28	28	28	30
Females.....												
Fayette.....	23	11	16	15	13	14	16	8	13	16	16	11
Total.....	11	4	9	9	10	10	8	4	6	7	4	8
Males.....	12	7	7	6	3	4	8	4	7	9	11	3
Females.....												
Floyd.....	42	34	35	34	29	34	40	24	29	34	27	36
Total.....	17	21	16	15	15	23	20	10	16	20	13	22
Males.....	24	17	14	18	14	11	20	14	13	14	14	14
Females.....												
Fountain.....	20	13	19	26	26	22	13	23	17	24	21	14
Total.....	11	7	5	13	9	7	6	9	9	16	13	6
Males.....	9	6	14	13	17	15	8	14	8	8	8	8
Females.....												
Franklin.....	15	20	18	27	17	14	24	17	15	11	19	15
Total.....	6	9	8	15	8	5	15	8	9	6	8	9
Males.....	6	9	8	15	8	5	15	8	9	6	8	9
Females.....	9	11	10	12	9	9	9	9	6	5	11	6
Fulton.....	27	16	26	15	22	16	19	19	21	13	11	12
Total.....	11	10	17	7	14	9	9	10	13	7	7	8
Males.....	16	6	9	8	8	7	10	9	8	6	4	4
Females.....												
Gibson.....	27	32	36	36	29	39	32	31	22	19	21	23
Total.....	12	17	20	16	13	19	14	14	13	12	12	8
Males.....	16	16	16	20	16	20	18	17	9	7	9	15
Females.....												
Grant.....	84	79	80	73	58	60	61	76	68	72	64	70
Total.....	59	46	47	41	30	36	37	47	41	46	40	41
Males.....	25	33	33	32	28	24	24	29	27	26	24	29
Females.....												
Greene.....	34	26	38	50	33	22	33	29	36	21	46	33
Total.....	17	14	17	19	20	20	20	15	14	9	29	17
Males.....	17	12	21	31	13	15	13	14	22	12	17	16
Females.....												
Hamilton.....	30	12	47	36	29	22	34	22	23	16	25	34
Total.....	19	7	20	16	16	12	20	13	12	6	15	13
Males.....	11	6	27	20	13	10	14	9	11	10	10	21
Females.....												
Hancock.....	27	10	35	22	18	15	16	15	25	16	17	16
Total.....	14	4	17	12	11	11	9	8	15	6	10	3
Males.....	13	6	18	10	7	4	7	7	10	10	7	13
Females.....												
Harrison.....	18	18	25	20	22	19	12	21	17	19	19	14
Total.....	12	13	10	14	13	8	7	12	12	18	16	8
Males.....												
Females.....												

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Clark.....	Total.....	40	29	42	47	41	32	39	30	23	25	30	34
	Males.....	20	19	20	20	16	13	19	16	4	4	12	23
	Females.....	20	10	22	18	25	19	20	14	19	13	18	11
Clay.....	Total.....	31	28	32	44	35	34	27	38	30	25	28	41
	Males.....	12	15	16	23	21	19	12	16	15	15	18	20
	Females.....	19	13	16	21	14	15	15	22	15	10	10	21
Clinton.....	Total.....	37	30	23	25	26	25	29	31	21	24	27	43
	Males.....	19	20	11	11	12	14	16	17	10	15	14	18
	Females.....	18	10	12	14	14	11	13	14	11	9	13	25
Crawford.....	Total.....	7	10	17	14	12	6	9	7	8	6	8	5
	Males.....	4	5	10	11	8	1	3	7	6	6	3	2
	Females.....	3	5	7	3	4	5	6	.....	2	3	5	3
Daviess.....	Total.....	20	26	37	26	31	21	26	22	24	23	23	16
	Males.....	14	15	18	12	15	12	16	13	13	13	11	9
	Females.....	6	11	19	14	16	9	10	9	11	12	14	7
Dearborn.....	Total.....	21	21	28	33	22	27	24	24	17	19	20	19
	Males.....	10	10	14	17	12	15	9	14	5	11	12	11
	Females.....	11	11	14	16	10	12	15	10	12	8	8	8
Deatur.....	Total.....	13	14	23	23	31	15	18	29	23	21	20	27
	Males.....	8	8	14	14	22	10	12	11	12	8	13	17
	Females.....	5	6	9	9	9	5	6	18	11	13	7	10
Detkild.....	Total.....	22	22	37	33	31	20	24	20	24	16	14	22
	Males.....	11	14	22	16	13	9	14	11	16	10	10	10
	Females.....	11	8	15	17	18	11	10	9	8	6	7	12
Delaware.....	Total.....	51	52	68	72	52	51	37	52	55	49	45	56
	Males.....	31	34	32	33	26	23	24	33	29	22	20	29
	Females.....	20	23	36	39	26	28	13	19	26	27	25	27
Dubois.....	Total.....	16	10	22	15	13	16	15	24	10	11	15	17
	Males.....	6	7	15	8	9	7	13	13	4	7	7	9
	Females.....	10	3	13	7	4	9	2	11	6	4	8	8

Elkhart.....	Total.....	67	64	56	70	58	40	43	47	45	46	62	63
	Males.....	34	31	27	44	36	22	21	25	17	27	34	33
	Females.....	33	23	29	26	22	18	22	22	28	18	28	30
Payette.....	Total.....	23	11	16	15	13	14	16	8	12	16	15	11
	Males.....	11	4	9	9	10	10	8	4	6	7	4	8
	Females.....	12	7	7	6	3	4	8	4	7	9	11	3
Floyd.....	Total.....	42	34	35	34	29	23	40	24	29	34	27	36
	Males.....	18	17	21	16	15	23	20	20	16	20	13	22
	Females.....	24	17	14	18	14	11	20	14	13	14	14	14
Fountain.....	Total.....	20	13	19	26	26	22	13	23	17	24	21	14
	Males.....	11	7	5	13	9	7	5	9	9	16	13	6
	Females.....	9	6	14	13	17	15	8	14	8	8	8	8
Franklin.....	Total.....	15	20	18	27	17	14	24	17	15	11	19	15
	Males.....	6	9	8	15	8	5	15	8	9	6	8	9
	Females.....	9	11	10	12	9	9	9	9	6	5	11	6
Fulton.....	Total.....	27	16	26	15	22	16	19	19	21	13	11	12
	Males.....	11	10	17	7	14	9	9	10	13	7	7	8
	Females.....	16	6	9	8	8	7	10	9	8	6	4	4
Gibson.....	Total.....	27	32	38	36	29	39	32	31	22	19	21	23
	Males.....	12	17	20	16	13	19	14	14	13	12	12	8
	Females.....	16	15	16	20	16	20	18	17	9	7	9	15
Grant.....	Total.....	84	79	80	73	58	60	61	76	68	72	64	70
	Males.....	69	46	47	41	30	36	37	47	41	46	40	41
	Females.....	25	33	33	32	28	24	24	29	27	26	24	29
Greene.....	Total.....	34	26	38	50	33	22	33	29	36	21	46	33
	Males.....	17	14	17	19	20	7	20	15	14	9	29	17
	Females.....	17	12	21	31	13	15	13	14	22	12	17	16
Hamilton.....	Total.....	30	13	47	36	29	22	34	22	23	16	25	34
	Males.....	19	7	30	16	16	12	20	13	12	6	15	13
	Females.....	11	6	27	20	13	10	14	9	11	10	10	21
Hancock.....	Total.....	27	10	35	22	18	15	16	15	25	16	17	16
	Males.....	13	4	17	12	11	11	7	5	13	6	10	3
	Females.....	13	6	18	10	7	4	7	7	10	10	7	13
Harrison.....	Total.....	18	18	25	20	22	19	12	21	17	19	19	14
	Males.....	8	5	15	6	16	11	5	9	12	11	12	9
	Females.....	12	13	10	14	13	8	7	12	5	8	6	5

TABLE No. 3—Continued.

COUNTIES.		Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Hendricks.....	Total.....	33	18	32	37	36	18	11	14	14	14	16	13	12
	Males.....	12	8	23	11	14	8	6	7	8	6	11	7	7
	Females.....	21	10	10	16	12	7	5	7	6	6	5	6	5
Henry.....	Total.....	27	22	36	44	43	38	36	34	34	38	28	26	32
	Males.....	21	12	18	27	28	16	16	16	16	23	18	13	19
	Females.....	6	10	23	17	15	12	16	18	18	15	10	13	13
Howard.....	Total.....	43	28	64	53	32	30	39	39	43	39	41	32	30
	Males.....	19	15	26	20	18	17	17	28	28	23	22	13	10
	Females.....	24	13	28	24	14	13	22	15	15	16	19	19	14
Huntington.....	Total.....	27	35	27	21	26	20	23	23	31	30	32	27	27
	Males.....	12	15	14	13	13	13	16	16	16	16	14	14	13
	Females.....	15	10	13	8	13	13	6	7	12	14	14	9	13
Jackson.....	Total.....	28	26	34	22	42	19	21	21	26	26	20	24	20
	Males.....	12	12	23	6	23	10	10	10	12	13	8	13	17
	Females.....	16	14	9	13	19	9	11	11	13	13	12	11	13
Jasper.....	Total.....	4	16	7	10	9	23	16	12	15	15	8	11	14
	Males.....	.....	9	3	3	4	16	8	8	8	3	3	8	8
	Females.....	4	7	4	7	5	7	7	4	7	7	5	3	6
Jay.....	Total.....	25	17	38	32	16	11	14	14	22	23	20	20	21
	Males.....	12	7	22	18	9	6	6	6	6	10	10	16	12
	Females.....	13	10	16	14	7	5	8	8	11	8	10	13	9
Jefferson.....	Total.....	36	40	33	37	34	28	26	26	26	26	20	30	28
	Males.....	24	23	19	21	20	12	12	12	16	16	9	18	16
	Females.....	12	17	16	16	14	16	14	14	10	10	16	10	12
Jennings.....	Total.....	23	15	22	18	20	14	18	18	11	8	13	12	12
	Males.....	12	4	12	14	7	8	6	4	4	6	6	4	4
	Females.....	11	11	10	4	13	6	13	7	7	4	7	6	8
Johnson.....	Total.....	16	24	31	20	22	16	24	24	26	17	21	20	18
	Males.....	6	12	18	10	9	10	11	7	16	2	11	7	11
	Females.....	10	12	13	10	13	6	13	17	10	10	10	13	7

Knox.....	Total.....	40	47	47	52	48	44	44	37	48	39	34	43
	Males.....	31	23	28	24	24	27	28	21	27	17	18	26
	Females.....	19	24	19	28	24	17	23	16	21	22	16	17
Kosciusko.....	Total.....	28	35	30	26	27	35	25	26	20	21	21	38
	Males.....	17	17	14	14	11	23	13	13	15	13	9	21
	Females.....	10	18	13	12	16	12	10	16	5	6	12	17
Lagrange.....	Total.....	29	12	14	18	18	7	17	8	14	12	19	9
	Males.....	14	4	6	10	9	3	9	1	9	7	11	6
	Females.....	15	8	8	8	9	4	8	7	5	5	8	3
Lake.....	Total.....	137	136	150	112	132	114	151	107	108	107	110	111
	Males.....	71	81	102	70	73	77	86	60	73	61	65	63
	Females.....	66	55	48	42	48	37	65	47	36	46	45	48
Laporte.....	Total.....	46	50	63	55	49	36	41	54	52	41	49	51
	Males.....	25	32	33	36	26	17	23	35	30	22	25	32
	Females.....	21	18	30	19	20	19	18	19	22	19	24	19
Lawrence.....	Total.....	37	36	49	41	26	35	32	34	37	31	30	33
	Males.....	18	18	24	21	14	21	16	12	16	12	13	20
	Females.....	19	18	25	20	12	14	16	22	19	19	10	18
Madison.....	Total.....	78	83	94	73	60	47	46	61	65	56	61	66
	Males.....	41	45	57	33	34	17	21	30	36	30	31	41
	Females.....	37	38	37	40	26	30	25	31	30	26	30	25
Marion.....	Total.....	391	399	451	433	441	356	359	350	339	358	313	358
	Males.....	205	194	236	244	247	197	203	186	175	196	169	197
	Females.....	186	175	215	189	194	159	156	173	164	192	164	161
Marshall.....	Total.....	23	25	27	21	20	15	22	25	15	18	21	17
	Males.....	10	12	19	8	10	5	12	16	10	14	11	10
	Females.....	13	13	8	13	10	10	10	9	5	4	10	7
Martin.....	Total.....	16	14	14	15	4	13	16	8	13	11	6	11
	Males.....	8	9	7	6	1	6	9	4	7	5	5	7
	Females.....	8	5	7	9	3	7	7	4	6	6	1	4
Miami.....	Total.....	37	30	35	32	25	24	23	26	23	35	23	28
	Males.....	19	21	17	14	16	12	10	10	10	13	14	16
	Females.....	18	9	18	18	9	12	13	13	12	17	9	12
Monroe.....	Total.....	28	28	38	26	23	27	29	30	29	24	21	21
	Males.....	12	16	16	14	14	9	17	13	15	7	13	11
	Females.....	14	16	22	10	9	18	12	17	14	17	9	10

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Montgomery.....	Total.....	27	26	35	37	26	26	31	37	35	36	31	24
	Males.....	17	12	20	20	11	10	15	19	19	14	16	10
	Females.....	10	14	15	17	15	16	16	18	20	22	15	14
Morgan.....	Total.....	23	22	24	26	23	22	23	16	20	21	13	17
	Males.....	13	11	16	16	17	11	12	12	6	11	6	7
	Females.....	10	11	8	10	6	11	11	4	14	10	7	10
Newton.....	Total.....	7	6	8	8	11	10	8	12	10	7	8	9
	Males.....	2	4	6	3	6	6	1	4	7	5	4	4
	Females.....	5	2	2	5	7	4	7	8	3	2	4	5
Noble.....	Total.....	23	17	22	21	21	23	19	26	26	24	24	27
	Males.....	12	9	16	14	12	7	12	12	11	13	11	19
	Females.....	11	8	8	7	9	16	7	14	15	16	13	8
Ohio.....	Total.....	5	4	6	5	5	6	6	4	1	5	2	4
	Males.....	4	2	4	3	3	4	3	3	1	4	1	4
	Females.....	1	2	2	2	2	2	3	1	.....	1	1	.....
Orange.....	Total.....	17	20	26	16	18	14	14	21	11	10	6	13
	Males.....	14	6	13	7	11	8	8	9	5	5	4	4
	Females.....	3	14	13	9	7	6	5	12	6	5	2	9
Owen.....	Total.....	15	12	19	9	12	9	9	10	8	10	11	12
	Males.....	8	4	14	5	6	5	5	6	3	5	5	5
	Females.....	7	8	5	4	6	4	4	4	5	5	6	7
Parks.....	Total.....	23	30	29	16	23	19	27	27	20	21	19	20
	Males.....	9	20	18	10	11	6	6	9	12	10	11	7
	Females.....	14	10	11	6	12	13	18	15	10	11	8	13
Perry.....	Total.....	25	17	26	16	18	11	18	16	11	19	14	10
	Males.....	15	9	15	8	10	7	8	7	5	7	4	4
	Females.....	10	8	11	8	11	3	8	9	6	12	7	6
Pike.....	Total.....	26	31	23	27	21	16	16	23	18	21	15	17
	Males.....	14	15	14	19	13	6	10	9	8	11	7	8
	Females.....	12	16	9	8	9	10	13	13	10	10	8	9

Porter	Total	13	23	19	31	24	10	12	15	27	20	19	24
	Males	6	12	5	15	13	7	8	8	11	10	12	16
	Females	7	11	14	16	16	3	4	7	16	10	7	8
Poey	Total	21	14	20	10	15	12	16	18	22	14	16	15
	Males	6	9	11	6	8	5	8	11	12	6	9	7
	Females	12	5	9	4	7	8	8	7	10	8	7	8
Pubski	Total	21	12	20	16	13	18	14	14	9	17	12	15
	Males	12	6	9	9	7	8	10	7	4	5	7	4
	Females	9	6	11	7	6	10	4	7	5	12	5	6
Putnam	Total	19	24	21	21	25	16	16	16	17	31	16	13
	Males	11	9	10	12	17	9	6	6	13	17	13	3
	Females	8	15	11	9	8	7	10	10	4	14	3	10
Randolph	Total	32	37	34	46	34	33	19	23	31	28	23	36
	Males	9	22	20	20	14	16	11	12	20	14	14	21
	Females	23	15	14	26	20	17	8	11	11	14	9	15
Ripley	Total	26	20	22	23	20	12	21	25	19	25	11	7
	Males	17	8	9	11	14	6	8	11	9	15	5	5
	Females	9	12	13	12	15	6	13	11	10	10	6	2
Rush	Total	26	15	32	20	25	19	19	12	20	20	24	22
	Males	13	10	19	16	11	13	7	8	8	10	17	14
	Females	13	5	13	4	14	6	12	4	12	10	7	8
Scott	Total	10	7	7	11	7	12	15	7	16	7	7	4
	Males	5	4	3	6	3	7	9	4	5	6	3	2
	Females	5	3	4	6	4	5	6	3	11	1	4	2
Shelby	Total	35	20	32	35	31	22	23	19	22	23	29	25
	Males	23	6	20	16	19	13	10	8	16	12	17	18
	Females	12	14	12	19	12	9	13	11	6	11	12	7
Spencer	Total	16	16	15	20	16	22	14	27	19	17	9	22
	Males	9	4	7	12	9	8	5	12	8	7	5	10
	Females	7	12	8	8	7	14	9	15	11	10	4	12
Starke	Total	13	18	7	12	12	7	6	5	5	19	6	15
	Males	6	10	1	6	8	4	3	2	1	8	2	11
	Females	7	8	6	6	4	3	3	3	4	11	4	4
Steuben	Total	14	18	15	13	6	13	20	6	17	13	14	18
	Males	8	10	8	7	4	9	10	1	10	6	10	10
	Females	10	8	7	6	2	4	10	5	7	7	4	8



TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Montgomery.....	Total.....	27	26	35	37	26	28	31	37	35	36	31	24
	Males.....	17	12	20	20	11	10	16	19	18	14	16	10
	Females.....	10	14	15	17	15	18	16	18	20	22	15	14
Morgan.....	Total.....	23	22	24	26	28	22	23	18	20	21	13	17
	Males.....	13	11	14	16	17	12	12	12	6	11	7	7
	Females.....	10	11	8	10	6	11	11	4	14	10	7	10
Newton.....	Total.....	7	6	8	8	11	10	3	12	10	7	8	9
	Males.....	2	4	6	3	4	6	1	4	7	5	4	4
	Females.....	5	2	2	5	7	4	2	8	3	2	4	5
Noble.....	Total.....	23	17	22	21	21	23	19	26	26	24	24	27
	Males.....	12	9	14	14	12	7	12	12	11	14	11	19
	Females.....	11	8	8	7	9	16	7	14	15	10	13	8
Ohio.....	Total.....	5	4	6	5	5	6	6	4	1	5	2	4
	Males.....	4	2	4	4	3	4	3	3	1	4	1	4
	Females.....	1	2	2	2	2	2	3	3	.....	1	1	.....
Orange.....	Total.....	17	20	26	16	18	14	14	21	11	10	6	13
	Males.....	14	6	13	7	11	8	8	9	9	5	4	4
	Females.....	3	14	13	9	7	6	5	12	6	5	2	9
Owen.....	Total.....	15	12	19	9	12	9	9	10	8	10	11	12
	Males.....	8	4	14	5	6	5	4	6	3	5	5	5
	Females.....	7	8	5	4	6	4	5	4	5	5	6	7
Parko.....	Total.....	23	30	29	16	23	19	27	27	20	21	19	20
	Males.....	9	20	18	10	11	6	9	9	12	10	11	7
	Females.....	14	10	11	6	12	13	18	15	10	11	8	13
Perry.....	Total.....	25	17	26	16	18	11	18	16	11	19	14	10
	Males.....	9	15	8	7	8	10	10	7	5	7	4	4
	Females.....	10	8	11	8	11	3	8	9	6	12	7	6
Pike.....	Total.....	26	31	23	27	21	16	23	23	18	21	15	17
	Males.....	14	15	14	19	12	6	10	9	8	11	7	8
	Females.....	12	16	9	8	9	10	13	13	10	10	8	9

Porter...	Total	13	23	19	31	24	10	12	15	27	20	19	24
	Males	6	12	5	14	14	7	8	8	11	10	12	16
	Females	7	11	14	16	10	3	4	7	16	10	7	8
Posey...	Total	21	14	20	10	15	13	16	18	22	14	16	15
	Males	9	9	11	6	8	5	8	11	12	6	9	7
	Females	12	5	9	4	7	8	8	7	10	8	7	8
Pulaski...	Total	21	12	20	16	13	18	14	14	9	17	12	15
	Males	12	6	9	9	7	8	10	7	4	5	7	9
	Females	9	6	11	7	6	10	4	7	5	12	5	6
Putnam...	Total	19	24	21	21	25	16	16	16	17	31	16	13
	Males	11	11	10	12	17	9	6	6	13	17	13	3
	Females	8	15	11	9	8	7	10	10	4	14	3	10
Randolph...	Total	32	37	34	46	34	33	19	23	31	28	23	36
	Males	9	22	20	14	16	16	11	12	20	14	14	21
	Females	23	15	14	26	20	17	8	11	11	14	9	15
Ripley...	Total	26	20	22	23	29	12	21	25	19	25	11	7
	Males	17	8	9	11	14	6	8	11	9	15	5	5
	Females	9	12	13	12	15	6	13	14	10	10	6	2
Rush...	Total	26	15	32	20	25	19	19	12	20	20	24	22
	Males	13	5	13	4	14	6	12	8	8	10	17	14
	Females	13	10	19	16	11	13	7	4	12	10	7	8
Scott...	Total	10	7	7	11	7	12	15	7	16	7	7	4
	Males	5	4	3	5	3	7	9	4	5	6	3	2
	Females	5	3	4	6	4	5	6	3	11	1	4	2
Shelby...	Total	35	20	32	35	31	22	23	19	22	23	29	25
	Males	23	6	20	16	19	13	10	8	16	12	17	18
	Females	12	14	12	19	12	9	13	11	6	11	12	7
Spencer...	Total	16	16	15	20	16	22	14	37	19	17	9	22
	Males	9	4	7	12	9	8	5	12	8	7	5	10
	Females	7	12	8	8	7	14	9	15	11	10	4	12
Starke...	Total	13	18	7	12	12	7	6	5	5	19	6	15
	Males	6	10	1	6	8	4	3	2	1	8	2	11
	Females	7	8	6	6	4	3	3	3	4	11	4	4
Steuben...	Total	14	18	15	13	6	13	20	6	17	13	14	18
	Males	7	10	8	7	4	9	10	1	10	6	10	10
	Females	10	8	7	6	2	4	10	5	7	7	4	8

TABLE No. 3—Continued.

COUNTIES.	Sxx.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
St. Joseph.....	Total.....	91	83	103	104	89	76	67	91	88	104	102	96
	Males.....	57	48	51	52	50	42	43	53	45	52	50	52
	Females.....	34	35	52	52	39	34	24	38	43	52	52	34
Sullivan.....	Total.....	41	26	40	31	28	22	33	33	34	28	30	30
	Males.....	20	12	17	13	17	15	14	23	17	17	17	17
	Females.....	21	14	23	18	11	7	19	10	17	11	13	13
Switzerland.....	Total.....	8	20	19	15	9	7	8	12	7	7	10	11
	Males.....	5	11	9	9	7	3	4	7	5	3	6	8
	Females.....	3	9	10	6	2	4	4	5	2	4	4	3
Tippecanoe.....	Total.....	61	56	64	60	61	45	54	59	56	47	53	54
	Males.....	32	30	35	39	34	22	24	27	26	33	29	28
	Females.....	29	26	29	21	27	23	30	32	30	14	24	26
Tipton.....	Total.....	21	22	31	17	16	14	18	19	14	17	14	18
	Males.....	10	14	13	7	10	5	11	9	8	9	7	10
	Females.....	11	8	18	10	6	9	7	10	6	8	7	8
Union.....	Total.....	6	7	8	7	8	9	6	2	4	2	12	7
	Males.....	3	6	2	3	5	5	4	1	4	2	10	4
	Females.....	3	1	6	4	3	4	2	1	1	1	2	3
Vanderburgh.....	Total.....	101	107	113	120	101	115	122	95	106	94	104	92
	Males.....	59	67	69	61	51	55	61	54	60	53	68	55
	Females.....	42	40	44	59	50	60	61	41	46	41	36	37
Vermillion.....	Total.....	27	27	37	31	29	26	28	31	17	27	19	23
	Males.....	19	18	21	12	22	17	13	15	12	15	11	9
	Females.....	8	9	16	19	7	9	15	16	5	12	8	13
Vigo.....	Total.....	102	126	149	139	101	87	117	106	111	108	92	116
	Males.....	74	71	70	74	59	39	78	78	62	60	51	63
	Females.....	28	55	79	65	42	48	39	44	49	48	41	53
Wabash.....	Total.....	36	23	34	23	37	21	29	23	25	10	21	21
	Males.....	19	12	16	11	24	6	19	11	9	6	11	13
	Females.....	17	11	18	12	13	15	10	12	16	4	10	8

Warren.....	Total.....	11	5	10	14	13	11	13	9	9	10	10	7
Males.....	7	1	3	9	7	7	7	7	5	6	4	3	4
Females.....	4	4	7	5	6	6	4	6	4	3	6	7	3
Warrick.....	Total.....	24	23	41	24	19	17	19	18	21	22	28	17
Males.....	16	16	24	11	12	10	10	11	12	12	11	11	9
Females.....	9	7	17	13	7	7	7	8	9	9	11	17	8
Washington.....	Total.....	16	18	17	17	15	9	19	17	10	15	19	10
Males.....	6	8	6	11	11	8	8	9	12	7	10	11	10
Females.....	10	10	11	6	4	4	1	10	5	3	5	8	9
Wayne.....	Total.....	37	70	70	70	48	43	42	57	49	48	56	63
Males.....	21	24	38	35	23	24	24	23	29	35	28	32	31
Females.....	16	46	32	35	25	24	19	19	28	14	20	24	32
Wells.....	Total.....	19	18	21	13	13	20	14	19	15	18	11	13
Males.....	13	10	11	7	7	12	8	8	10	8	13	7	3
Females.....	6	8	10	6	6	6	8	6	9	7	5	4	10
White.....	Total.....	11	17	21	26	12	11	11	20	18	12	13	12
Males.....	4	10	14	16	7	7	3	6	10	8	8	9	5
Females.....	7	7	7	10	5	8	8	5	10	9	5	4	7
Whitley.....	Total.....	16	13	12	17	15	6	12	21	14	20	14	9
Males.....	7	7	4	10	8	8	4	7	8	8	9	6	9
Females.....	9	6	5	7	7	7	2	5	13	6	11	9	3
Grand Total.....	Total.....	3,181	3,010	3,670	3,386	3,078	2,660	2,877	2,913	2,786	2,794	2,678	2,958
Males.....	1,683	1,604	1,949	1,824	1,678	1,406	1,406	1,522	1,536	1,478	1,492	1,477	1,558
Females.....	1,498	1,406	1,721	1,571	1,400	1,244	1,244	1,355	1,377	1,307	1,302	1,201	1,300

TABLE No. 3—Continued.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, for Year 1914.

COUNTIES.	Sex.	Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
Adams.....	Total.....	31	3	2	.....	.....	36	8	4	2	10	7	4	6	8	7	11	11	17	21
	Males.....	17	2	1	.....	.....	20	6	3	2	8	4	3	4	3	4	7	7	15	11
	Females.....	14	1	1	.....	.....	16	2	1	.....	2	3	1	3	2	3	4	4	12	10
Allen.....	Total.....	156	20	12	5	3	106	30	16	28	42	53	46	52	46	44	64	70	79	81
	Males.....	87	11	7	4	2	121	14	12	13	24	28	25	28	23	27	37	53	38	42
	Females.....	59	9	5	1	1	75	16	4	15	18	25	21	24	23	17	27	26	41	39
Bartholomew.....	Total.....	46	7	2	2	2	59	9	4	6	9	11	14	11	10	10	14	17	25	27
	Males.....	26	5	1	1	2	35	5	1	3	3	4	8	8	8	8	8	8	13	17
	Females.....	20	2	1	1	.....	24	4	3	3	7	8	10	3	0	2	6	4	7	10
Benton.....	Total.....	18	4	1	2	.....	25	1	.....	2	5	3	4	2	5	5	7	7	6	4
	Males.....	11	1	1	1	.....	14	1	.....	2	2	2	4	2	3	3	5	1	2	1
	Females.....	7	3	.....	1	.....	11	.....	.....	.....	3	1	.....	.....	2	2	2	3	4	3
Blackford.....	Total.....	36	9	1	1	3	50	6	2	4	4	5	7	6	8	8	7	10	12	18
	Males.....	20	3	1	.....	2	26	2	2	4	2	5	5	5	4	4	4	4	10	10
	Females.....	16	6	.....	1	1	24	4	2	.....	2	.....	2	1	4	5	5	6	2	8
Boone.....	Total.....	35	7	10	2	.....	54	4	5	8	10	4	12	6	7	5	14	16	17	28
	Males.....	18	3	5	1	.....	27	3	2	4	5	4	8	3	5	2	3	8	11	11
	Females.....	17	4	5	1	.....	27	1	3	4	5	3	4	3	2	3	11	8	6	17
Brown.....	Total.....	11	2	3	1	2	19	2	1	.....	4	2	3	.....	3	1	3	5	8	5
	Males.....	4	.....	1	1	.....	6	1	.....	.....	2	.....	1	.....	2	.....	2	5	2	2
	Females.....	7	2	2	.....	2	13	1	1	.....	2	2	2	.....	1	1	3	3	3	3
Carroll.....	Total.....	23	4	1	2	.....	40	.....	.....	4	5	6	3	3	4	4	12	6	22	16
	Males.....	18	2	.....	.....	.....	20	.....	.....	2	1	3	1	2	4	2	8	14	14	10
	Females.....	15	2	1	2	.....	20	.....	.....	2	4	3	2	1	.....	2	4	6	8	6

Cass.....	Total.....	58	10	8	4	3	83	3	8	11	18	24	33	26	38	21	18	42	44
	Males.....	42	3	5	3	2	55	2	5	7	11	16	17	20	19	10	12	20	24
	Females.....	16	7	3	1	1	28	1	3	4	7	8	16	6	19	11	6	22	20
Clark.....	Total.....	76	20	9	2	2	109	2	6	9	11	20	11	15	18	13	16	28	25
	Males.....	39	10	3	1	1	53	1	4	6	8	11	7	8	10	5	9	15	7
	Females.....	37	10	6	1	2	56	1	2	3	3	9	4	7	8	8	7	10	18
Clay.....	Total.....	86	14	5	3	5	113	5	4	15	12	14	13	16	12	10	12	9	26
	Males.....	53	5	4	1	3	65	3	3	7	8	6	4	8	9	8	6	4	17
	Females.....	33	9	1	2	2	48	2	1	8	4	8	9	8	3	2	6	5	13
Clinton.....	Total.....	44	11	6	4	2	67	2	7	7	14	13	16	10	10	10	24	21	24
	Males.....	26	4	1	3	1	35	1	5	4	6	6	6	3	8	5	17	13	14
	Females.....	18	7	5	1	1	32	1	2	3	10	7	10	7	2	5	7	8	10
Crawford.....	Total.....	9	10	1	1	1	21	2	4	5	1	4	5	2	5	3	3	7	7
	Males.....	5	6	1	1	1	13	2	3	1	1	2	2	1	4	1	3	4	3
	Females.....	4	4	...	...	...	8	...	1	4	...	...	3	1	1	2	...	3	4
Davies.....	Total.....	57	9	4	1	2	73	8	10	9	7	10	7	9	13	9	18	10	21
	Males.....	36	8	4	1	1	50	3	4	5	2	5	3	7	7	2	6	4	12
	Females.....	19	3	...	...	1	23	5	6	4	5	5	4	2	6	7	12	6	9
Dearborn.....	Total.....	29	9	3	1	1	42	6	5	4	13	11	8	5	11	5	6	25	24
	Males.....	19	3	3	1	...	26	2	3	3	6	5	4	1	7	4	5	18	7
	Females.....	10	6	...	...	...	16	4	2	1	7	6	4	4	4	1	1	7	8
Deatur.....	Total.....	25	11	3	1	1	40	1	2	2	3	8	10	11	7	7	10	15	24
	Males.....	20	7	2	1	...	28	1	1	1	2	4	3	4	4	4	5	10	18
	Females.....	5	4	...	...	...	12	...	1	1	...	...	...	...	...	3	6	5	8
Detalib.....	Total.....	29	5	4	...	...	38	3	6	10	7	8	12	7	10	9	12	18	30
	Males.....	17	2	2	...	...	21	2	3	5	2	2	4	4	6	5	9	15	13
	Females.....	12	3	2	...	...	17	1	4	5	3	6	5	3	4	4	3	9	17
Delaware.....	Total.....	101	18	8	7	...	134	13	7	14	22	28	35	30	20	22	29	31	59
	Males.....	54	10	5	3	...	72	5	5	9	11	13	16	14	8	13	16	24	42
	Females.....	47	8	3	4	...	62	8	2	5	11	15	19	16	12	14	13	15	30
Dubois.....	Total.....	35	5	2	...	...	44	5	4	7	6	5	7	10	8	3	9	7	13
	Males.....	18	3	1	...	...	23	2	1	2	2	2	3	7	3	2	2	4	6
	Females.....	17	2	1	...	...	21	3	3	6	4	3	4	3	5	1	7	3	7
Elkhart.....	Total.....	79	8	10	1	2	100	20	4	11	14	15	24	16	25	29	27	44	63
	Males.....	43	6	5	1	1	56	16	2	3	6	9	12	7	15	16	19	28	32
	Females.....	36	2	5	...	...	44	4	2	8	8	6	12	9	10	13	8	18	30

TABLE No. 3—Continued.

COUNTIES.	Sex.	Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
Fayette	Total.....	20	4	1	1		26	1	3	2	3	7	8	9	3	5	13	16	9	15
	Males.....	13	3	1			17	1	1	2	2	1	3	3	2	4	6	9	3	10
	Females.....	7	1		1		9					6	5	6	1	1	7	7	6	5
Floyd	Total.....	48	10	2		1	61	4	8	11	14	15	24	16	15	15	29	27	22	28
	Males.....	31	4	1		1	37	3	1	6	11	4	11	6	7	10	12	18	11	18
	Females.....	17	6	1			24	1	7	5	10	7	13	10	8	5	17	9	11	10
Fountain	Total.....	34	2	3	2	1	42	2	6	4	9	8	8	5	5	9	11	13	11	25
	Males.....	10	1	1			18		3	1	3	6	1	5	1	5	4	9	3	13
	Females.....	18	1	2	2	1	24	2	3	3	6	2	7		4	4	7	4	8	12
Franklin	Total.....	27	2	1	2	1	33	4	6	3	10	5	3	9	5	5	12	7	16	12
	Males.....	14	2	1	2		19	3	4	1	1	1	3	1	3	2	4	2	11	7
	Females.....	13				1	14	1	2	2	9	2	2	6	3	3	8	5	5	5
Fulton	Total.....	31	4	2	1		38	4	1	4	6	10	5	7	5	13	8	8	20	14
	Males.....	17	2	2	1		22	2		3	3	3	3	4	2	6	6	17	10	10
	Females.....	14	2				16	2	1	1	3	5	3	3	3	7	2	2	3	4
Gibson	Total.....	55	16	7	2	3	83	9	7	11	23	13	21	12	8	7	14	11	22	19
	Males.....	31	9	5	1	2	47	3	4	5	13	4	13	7	3	4	9	7	13	10
	Females.....	24	7	2	1		36	6	3	6	10	9	8	5	5	3	5	4	9	9
Grant	Total.....	96	18	11	5	5	135	21	8	16	26	29	32	25	25	25	38	42	48	78
	Males.....	57	6	7	1	4	75	19	2	7	10	10	17	10	14	15	16	23	28	54
	Females.....	39	12	4	4	1	60	13	6	9	16	19	15	15	11	11	19	19	20	24
Greene	Total.....	87	28	9	7	2	133	7	6	9	15	14	13	15	8	12	14	15	24	28
	Males.....	46	12	3	5	2	68	2	3	5	6	7	7	6	5	7	8	9	12	15
	Females.....	41	16	6	2		65	5	3	4	9	7	6	10	3	5	6	6	12	13
Hamilton	Total.....	38	7	6	2		53	8	5	8	9	11	4	9	12	10	17	28	18	29
	Males.....	22	4	2	1		29	5	4	5	5	4	5	1	4	3	10	12	8	10
	Females.....	16	3	4	1		24	3	1	3	4	6	3	4	8	7	7	16	10	19
Hancock	Total.....	29	10	3	2	2	46	1	3	5	6	3	3	6	10	7	9	13	14	22
	Males.....	17	5	2	1		25	1	1	3	3	3	1	3	3	2	7	12	13	13
	Females.....	12	5	1	1	2	21		2	2	3	2	2	3	7	4	2	6	1	9

Harrison.....	Total.....	31	5	.....	.....	.....	36	5	4	4	2	2	2	1	2	8	5	5	4	4	13	12	7	9	8	14	20
	Males.....	15	2	.....	.....	.....	18	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	
	Females.....	16	3	.....	.....	.....	18	4	2	2	2	2	2	2	1	2	2	2	2	2	5	5	3	6	6	9	
Handricks.....	Total.....	26	5	.....	.....	.....	35	2	7	10	7	9	1	2	3	5	6	6	5	5	8	12	5	10	13	20	
	Males.....	15	2	.....	.....	.....	19	1	4	5	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	
	Females.....	11	3	.....	.....	.....	16	1	3	5	3	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	
Henry.....	Total.....	65	16	.....	.....	.....	94	3	4	11	10	11	16	11	16	10	12	15	20	20	23	21	24	20	20	27	
	Males.....	40	6	.....	.....	.....	56	2	2	7	6	6	11	5	11	8	7	11	13	17	11	13	16	9	23	33	
	Females.....	25	10	.....	.....	.....	38	1	2	4	4	5	5	6	5	2	1	2	2	8	4	2	8	8	7	11	
Howard.....	Total.....	69	15	.....	.....	.....	100	12	5	10	16	13	17	13	17	21	16	23	21	16	23	21	24	20	20	27	
	Males.....	39	9	.....	.....	.....	56	7	3	5	7	6	10	8	10	11	8	10	11	16	9	23	23	13	16	18	
	Females.....	30	6	.....	.....	.....	44	5	2	5	9	7	7	7	7	13	10	13	10	8	11	10	8	11	14	14	
Huntington.....	Total.....	30	9	.....	.....	.....	49	4	2	2	11	9	5	5	5	11	11	14	19	21	20	23	21	20	23	28	
	Males.....	18	5	.....	.....	.....	30	.....	.....	.....	6	3	.....	.....	.....	6	9	9	11	13	9	13	11	10	10	10	
	Females.....	12	4	.....	.....	.....	19	4	2	2	5	6	6	6	6	5	5	5	5	8	8	5	8	11	10	10	
Jackson.....	Total.....	62	12	.....	.....	.....	89	17	5	4	11	9	16	16	16	12	10	6	12	17	12	17	12	17	12	18	
	Males.....	36	5	.....	.....	.....	47	9	3	3	6	3	8	8	8	15	8	8	2	7	10	4	10	4	10	10	
	Females.....	26	8	.....	.....	.....	42	8	2	1	6	6	8	8	8	7	2	4	5	7	8	7	8	8	8	8	
Jasper.....	Total.....	28	5	.....	.....	.....	34	.....	.....	.....	8	1	2	7	7	3	2	4	1	1	14	4	1	14	8	14	
	Males.....	13	3	.....	.....	.....	19	.....	.....	.....	3	.....	.....	.....	.....	1	1	1	1	1	4	1	4	7	10	10	
	Females.....	15	2	.....	.....	.....	15	.....	.....	.....	5	.....	.....	.....	.....	7	1	3	2	2	7	3	3	10	1	4	
Jay.....	Total.....	48	9	.....	.....	.....	62	7	2	2	8	5	7	7	7	6	5	5	6	5	6	6	21	17	21	27	
	Males.....	22	5	.....	.....	.....	30	3	1	2	5	1	2	5	5	3	3	3	3	3	10	9	14	9	14	20	
	Females.....	26	4	.....	.....	.....	32	4	1	4	3	4	3	4	2	3	2	2	3	2	11	8	7	7	7	7	
Jefferson.....	Total.....	30	.....	.....	.....	.....	25	3	.....	.....	13	8	13	23	15	15	18	29	31	35	28	28	31	35	28	28	
	Males.....	10	.....	.....	.....	.....	11	3	.....	.....	8	5	10	13	9	9	8	17	16	23	14	17	16	23	14	14	
	Females.....	10	.....	.....	.....	.....	14	.....	.....	.....	4	3	3	9	6	6	10	12	15	12	15	12	15	12	14	14	
Jennings.....	Total.....	20	6	.....	.....	.....	24	4	3	4	4	3	2	2	2	6	7	4	12	7	13	7	13	18	18	18	
	Males.....	12	4	.....	.....	.....	17	3	1	3	1	1	1	1	1	2	3	3	3	3	3	3	3	2	9	9	
	Females.....	8	2	.....	.....	.....	17	1	2	1	3	2	3	2	1	4	4	9	9	4	11	4	11	9	9	9	
Johnson.....	Total.....	43	7	.....	.....	.....	54	4	4	3	9	8	10	10	10	7	10	11	14	14	12	14	12	14	12	28	
	Males.....	24	5	.....	.....	.....	32	2	2	3	2	4	2	3	4	3	6	6	6	6	6	6	6	9	15	15	
	Females.....	19	2	.....	.....	.....	22	2	1	1	5	6	7	7	7	4	5	9	8	8	3	7	5	8	3	13	
Knox.....	Total.....	97	30	.....	.....	.....	148	13	14	17	18	21	17	17	17	24	28	25	32	29	34	24	24	24	24	24	
	Males.....	51	19	.....	.....	.....	78	6	8	8	13	11	9	9	9	17	15	8	19	14	19	14	19	14	14	24	
	Females.....	46	11	.....	.....	.....	70	8	6	9	5	10	8	8	8	7	13	17	13	15	10	10	10	10	10	10	



TABLE No. 3—Continued.

COUNTIES	Sex.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
Kosciusko.....	Total.....	38	5	7	4	54	6	8	8	12	8	6	5	5	11	8	33	30	30
	Males.....	25	3	6	2	36	5	5	7	6	5	3	3	4	6	4	11	19	15
	Females.....	13	2	1	2	18	1	3	1	6	3	3	2	4	5	4	22	11	15
Lacrange.....	Total.....	16	3	.....	.....	20	2	1	2	3	3	6	5	2	3	9	8	9	20
	Males.....	15	1	.....	.....	17	2	1	1	2	3	1	1	2	3	2	5	5	10
	Females.....	1	2	.....	.....	3	.....	.....	1	1	2	5	3	1	3	7	3	4	10
Lake.....	Total.....	508	98	46	16	11	679	48	18	57	62	73	74	68	61	60	51	61	47
	Males.....	287	53	32	8	6	386	24	10	39	47	52	47	52	47	35	39	34	38
	Females.....	221	45	14	8	5	293	24	8	18	15	21	27	16	14	25	12	28	10
Laporte.....	Total.....	119	16	6	2	3	146	11	6	22	13	22	28	19	25	18	31	28	32
	Males.....	64	8	4	1	1	78	7	3	10	12	9	17	13	13	17	10	21	16
	Females.....	55	8	2	1	2	68	4	3	8	10	4	5	6	8	8	10	12	18
Lawrence.....	Total.....	80	25	11	2	4	122	18	7	8	14	19	8	16	9	20	26	20	26
	Males.....	37	9	7	.....	1	64	9	5	5	9	6	12	1	10	5	11	10	14
	Females.....	43	16	4	2	3	68	9	2	3	8	7	7	6	4	9	15	10	12
Madison.....	Total.....	121	21	12	9	7	170	23	12	20	31	25	28	23	34	42	53	41	64
	Males.....	69	12	5	4	2	92	11	5	9	13	13	14	9	16	17	24	35	37
	Females.....	52	9	7	5	5	78	12	7	11	18	12	14	14	17	25	18	17	27
Marion.....	Total.....	612	129	49	31	30	851	104	87	126	204	212	222	257	249	322	201	330	311
	Males.....	325	63	21	21	15	445	60	42	60	98	109	130	160	150	181	177	187	177
	Females.....	287	66	28	10	15	406	44	45	66	106	103	92	118	119	141	114	143	134
Marshall.....	Total.....	31	5	3	1	3	43	6	4	3	10	8	10	5	2	12	13	15	29
	Males.....	21	3	3	.....	1	25	4	.....	7	3	5	1	1	3	8	7	9	19
	Females.....	10	2	3	1	2	18	2	3	3	6	3	5	4	6	4	6	7	11
Martin.....	Total.....	33	10	3	1	2	40	3	.....	2	5	3	5	5	3	5	6	14	6
	Males.....	21	6	1	1	1	30	1	.....	1	3	2	3	2	2	2	2	10	2
	Females.....	12	4	2	.....	1	10	2	1	1	2	3	2	3	1	3	3	4	3
Miami.....	Total.....	48	11	2	3	1	65	7	3	3	14	9	10	11	8	18	22	31	23
	Males.....	21	4	1	2	1	29	5	2	1	3	2	4	8	8	7	14	21	18
	Females.....	27	7	1	1	3	36	2	1	11	7	6	3	3	5	11	8	10	5

Monroe	Total	69	7	11	1	1	88	4	5	8	16	13	13	15	8	13	12	16	15	90
	Males	36	4	7	1	1	48	3	3	1	5	7	7	0	4	10	7	7	9	11
	Females	33	3	4			40	1	2	7	11	6	6	7		3	5	9		9
Montgomery	Total	31	7	7	2	2	52	5	5	8	8	5	12	5	18	15	24	27	31	25
	Males	19	2	3	2	2	28	1	4	5	3	3	5	3	8	9	12	12	16	11
	Females	15	5	4			24	4	1	3	5	2	7	2	10	6	12	15	15	14
Morgan	Total	27	10	2	4	1	44	4	3	7	2	9	5	10	10	6	11	14	19	19
	Males	16	5	1	4	1	24	4	2	6	1	4	2	6	6	3	5	7	11	16
	Females	9	5		1		20		1	1	1	5	3	4	4	3	6	7	8	3
Newton	Total	24	3	1	2		30	2		1		4	1	1	2	4	3	2	10	11
	Males	9			2		11	2				3		1		2	2	2	4	6
	Females	15	3	1			19			1		1	1			2	1		6	5
Noble	Total	33	4	1	1		39	4	2	6	4	4	6	6	8	8	8	18	24	20
	Males	21	1	1	1		24	1	1	5	4	3	3	4	3	5	5	8	13	13
	Females	12	3				15	3	1	1		1	3	2	5	3	3	10	11	7
Ohio	Total	9	1	1			10	1	1	1	1	2	1	1	1	1	2	1	4	4
	Males	3	1				4	1	1		1	1					1		2	2
	Females	6					6			1		1	1	1			1		2	2
Orange	Total	27	7	4	5	1	44	1	6	8	5	11	5	7	5	5	13	8	15	9
	Males	12	5	2	3	1	23	1	3	4	2	6	3	6	2	3	9	5	7	2
	Females	15	2	2	2		21	3	4	4	3	5	2	1	3	2	4	3	8	7
Owen	Total	8	1	2		2	16	1	3	2	6	3	5	5	3	2	9	6	13	6
	Males	3	2	1		1	7	1	2	1	1	1	2	3	3	2	6	4	9	2
	Females	5	2	1		1	9		1	1	5	2	3	2			3	2	4	4
Parke	Total	40	8	6	2	2	58	5	4	14	9	12	6	9	4	13	15	12	17	22
	Males	17	3	4	1	1	26	2	1	5	4	7	4	5	1	3	8	6	8	13
	Females	23	5	2	1	1	32	3	3	9	5	5	2	4	3	10	7	6	9	9
Perry	Total	32	12	3	3	5	55	6	2	8	11	4	3	1	13	5	8	10	7	22
	Males	21	5	2	3	1	31	3	1	2	4	3		1	5	2	6	4	3	12
	Females	11	7	1	3	2	24	3	1	6	7	1	3		8	3	2	6	4	10
Pike	Total	49	11	9	5	4	78	9	4	8	12	9	5	9	8	13	11	14	15	17
	Males	27	3	3	3	4	35	6	3	6	2	1	2	2	9	9	8	8	8	12
	Females	22	8	6	3		43	3	1	2	7	4	4	7	6	4	3	6	7	5
Porter	Total	25	1	7	3		39	2	2	13	7	6	10	5	5	6	18	13	16	18
	Males	15	1	6	2		24	1	1	4	3	4	6	2	2	3	9	9	9	8
	Females	10	3	1	1		15	1	2	9	4	2	1	3	3	3	9	4	8	10

TABLE No. 3—Continued.

COUNTIES.	Sex.	Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
Posey.....	Total.....	31	8	1	3	3	46	3	4	6	5	10	5	4	7	10	10	10	15	10
	Males.....	19	4	1	2	2	27	3	3	3	3	2	2	1	3	2	7	7	7	5
	Females.....	12	4	1	1	1	19	3	1	3	3	5	3	3	4	8	3	3	8	5
Pulaski.....	Total.....	36	7	7	1	1	51	4	1	3	6	5	3	4	6	3	3	10	17	13
	Males.....	24	5	5	1	1	35	3	1	1	2	2	2	1	1	1	2	6	8	5
	Females.....	12	2	2	1	1	16	1	1	3	4	3	1	3	5	2	2	4	9	8
Putnam.....	Total.....	24	4	2	1	1	31	19	9	7	8	6	5	6	9	12	9	13	20	25
	Males.....	14	4	1	1	1	19	12	5	4	6	2	2	2	3	6	4	6	14	13
	Females.....	10	1	1	1	1	12	7	4	3	2	4	3	4	6	6	5	7	6	12
Ravindolph.....	Total.....	47	6	7	2	2	64	11	10	9	17	9	8	12	9	11	15	23	24	29
	Males.....	27	3	6	1	1	35	5	4	8	5	4	4	4	7	4	6	12	12	12
	Females.....	20	6	1	1	1	29	6	6	1	12	5	4	10	2	7	9	11	12	17
Ripley.....	Total.....	37	2	2	1	1	42	3	4	4	5	8	6	11	8	4	12	10	15	29
	Males.....	24	1	2	1	1	28	2	1	3	3	3	3	3	3	5	1	4	8	14
	Females.....	13	1	1	1	1	14	1	3	1	2	5	3	8	3	3	8	5	7	15
Rush.....	Total.....	19	5	4	2	1	31	7	3	8	7	11	8	6	9	4	19	14	4	20
	Males.....	12	2	4	1	1	19	3	1	5	2	5	7	4	5	2	10	11	3	11
	Females.....	7	3	1	2	1	12	4	2	3	5	6	1	2	4	2	9	3	1	9
Scott.....	Total.....	17	6	2	1	1	26	2	5	3	5	3	4	2	2	7	6	4	5	6
	Males.....	13	3	2	1	1	18	4	4	1	3	2	2	2	3	1	2	1	2	1
	Females.....	4	3	1	1	1	8	2	1	2	2	1	2	2	4	1	4	3	3	4
Shelby.....	Total.....	42	4	1	1	2	50	5	5	8	8	8	10	5	13	16	18	19	20	31
	Males.....	25	2	1	1	1	28	2	3	5	4	3	5	3	8	10	10	12	12	21
	Females.....	17	2	1	1	1	22	3	2	3	4	5	5	2	5	11	8	7	8	10
Spencer.....	Total.....	30	5	3	2	2	42	9	4	3	9	5	9	5	7	5	9	6	15	23
	Males.....	14	3	3	1	2	23	4	2	2	4	1	5	1	4	2	2	3	4	9
	Females.....	16	2	1	1	1	19	5	1	1	5	4	4	4	3	3	7	3	11	14
Stark.....	Total.....	26	6	1	1	1	34	3	3	1	3	3	3	1	3	1	5	3	11	13
	Males.....	9	2	2	1	1	12	1	2	1	1	2	1	1	1	1	1	1	8	5
	Females.....	17	4	1	1	1	22	2	1	1	2	1	2	1	2	1	4	2	3	8

Steuben.....	Total.....	15	1	1	1	1	17	.....	6	4	1	2	4	2	7	15	11	16	20
Males.....	.....	11	.....	.....	.....	.....	12	.....	5	.....	1	2	3	.....	2	7	5	7	9
Females.....	.....	4	1	.....	.....	.....	5	.....	1	4	.....	.....	.....	2	5	8	6	9	11
St. Joseph.....	Total.....	208	33	19	13	5	378	18	9	43	48	51	38	42	53	54	66	64	71
Males.....	.....	140	14	8	7	1	170	9	7	10	25	26	30	20	31	21	37	37	37
Females.....	.....	69	19	11	6	4	108	9	2	11	18	22	21	18	22	33	29	27	34
Sullivan.....	Total.....	80	29	6	3	1	119	10	6	16	21	14	11	11	6	14	21	23	18
Males.....	.....	44	17	6	1	1	69	2	2	7	12	7	6	4	2	8	11	12	11
Females.....	.....	36	12	.....	2	.....	50	8	4	9	9	5	8	7	4	6	10	11	7
Switzerland.....	Total.....	11	2	2	1	1	17	2	3	.....	8	4	3	1	3	5	9	6	12
Males.....	.....	9	2	.....	1	.....	13	1	3	.....	5	2	2	1	1	3	5	4	6
Females.....	.....	2	.....	.....	.....	.....	4	.....	.....	.....	3	2	.....	2	2	2	2	6	6
Tippecanoe.....	Total.....	60	14	5	2	2	83	11	5	11	15	20	23	20	30	38	50	43	54
Males.....	.....	25	7	2	1	2	37	8	3	8	11	11	11	11	20	18	27	19	29
Females.....	.....	35	7	3	1	.....	46	3	2	3	14	4	9	11	18	20	23	24	25
Tipton.....	Total.....	35	8	1	2	1	47	3	1	8	6	7	6	8	8	10	10	15	23
Males.....	.....	18	3	1	1	.....	23	1	4	4	1	3	2	4	6	5	4	9	16
Females.....	.....	17	5	.....	1	.....	24	2	4	5	4	4	4	4	2	5	6	6	7
Union.....	Total.....	7	1	.....	1	1	9	1	.....	2	1	3	1	3	5	5	5	7	7
Males.....	.....	3	.....	.....	1	.....	5	1	.....	2	1	1	.....	2	2	2	3	3	6
Females.....	.....	4	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	3	3	3	2	4	1
Vanderburgh.....	Total.....	173	46	19	11	7	256	28	14	32	63	62	59	72	75	86	84	86	73
Males.....	.....	102	25	9	8	3	137	13	12	15	22	29	30	44	47	50	50	55	41
Females.....	.....	71	21	10	3	4	109	15	2	17	41	33	29	28	28	36	34	31	32
Vermillion.....	Total.....	70	21	4	3	4	111	9	4	9	0	8	10	6	9	15	22	17	20
Males.....	.....	51	12	2	2	3	68	6	2	4	2	3	6	2	6	12	14	11	18
Females.....	.....	28	9	2	3	1	43	3	2	5	4	5	4	4	3	3	8	6	11
Vigo.....	Total.....	219	55	31	16	2	323	41	23	33	59	62	67	65	69	85	75	76	81
Males.....	.....	125	28	14	7	2	176	22	18	18	32	39	41	38	46	64	47	44	40
Females.....	.....	94	27	17	9	.....	147	19	5	15	27	23	26	27	23	21	28	32	32
Wabash.....	Total.....	34	9	1	1	.....	45	3	8	7	8	10	12	9	5	12	14	27	32
Males.....	.....	22	7	1	1	.....	31	1	4	6	2	5	7	3	2	7	6	16	16
Females.....	.....	12	2	.....	.....	.....	14	2	4	1	6	5	5	6	3	6	8	11	16
Warren.....	Total.....	22	3	.....	.....	.....	25	4	.....	2	2	7	3	5	2	5	9	5	11
Males.....	.....	11	.....	.....	.....	.....	11	2	.....	1	1	2	1	3	1	3	5	4	5
Females.....	.....	11	3	.....	.....	.....	14	2	.....	1	1	5	2	2	1	2	4	1	6

TABLE No. 3—Continued.

COUNTIES.	Sex.	Under 1.	1.	2.	3.	4.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
Warrick.....	Total.....	46	9	4	3	4	66	8	6	10	11	7	8	10	9	11	14	13	22	19
	Males.....	28	4	1	3	2	38	4	3	3	2	3	4	6	6	5	10	8	13	13
	Females.....	18	5	3	...	2	28	4	3	7	9	4	4	4	3	6	4	5	10	6
Washington.....	Total.....	26	12	6	4	...	48	1	4	5	5	7	4	6	8	3	7	4	14	17
	Males.....	15	7	5	2	...	29	1	2	...	1	2	2	3	6	2	5	4	9	11
	Females.....	11	5	1	2	...	19	...	2	5	4	5	2	3	2	1	2	...	5	6
Wayne.....	Total.....	77	10	1	6	1	98	0	0	19	16	23	15	25	34	28	21	37	51	55
	Males.....	35	4	2	1	1	43	7	3	11	8	9	9	20	22	17	17	15	32	30
	Females.....	42	6	2	5	...	55	2	6	8	8	14	7	5	12	11	14	22	19	25
Wells.....	Total.....	27	2	1	2	...	32	2	4	7	7	7	5	5	6	4	10	5	18	15
	Males.....	20	1	1	1	...	22	1	2	5	2	3	5	1	4	2	6	4	16	10
	Females.....	7	2	...	1	...	10	...	2	2	5	4	...	4	2	2	4	1	2	5
White.....	Total.....	26	6	2	...	...	34	...	...	6	9	4	8	4	3	8	9	9	11	15
	Males.....	13	4	1	...	...	18	...	...	2	4	1	4	...	1	5	5	5	6	7
	Females.....	13	2	1	...	...	16	...	...	4	5	3	4	...	2	3	4	4	5	8
Whitley.....	Total.....	20	5	3	...	...	29	5	1	6	4	5	2	8	1	3	9	8	16	12
	Males.....	8	1	3	...	...	12	3	...	3	2	1	...	4	1	1	7	5	10	5
	Females.....	12	4	...	...	...	17	2	1	3	2	4	2	4	...	2	2	3	6	7
Grand total.....	Total.....	5,452	1,126	531	274	176	7,559	739	532	869	1,273	1,267	1,349	1,309	1,390	1,369	1,817	2,016	2,348	2,653
	Males.....	3,091	592	299	141	88	4,181	398	290	440	598	630	712	685	787	731	962	1,140	1,323	1,480
	Females.....	2,361	564	232	133	88	3,378	341	252	429	675	637	637	644	612	638	855	876	1,025	1,173

TABLE No. 3—Continued.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, for Year 1914.

COUNTIES.	Sex.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non-re- sidents.
Adams.	Total.	22	17	14	4	1			210		185	15		77	85	48		210	1
	Males.	8	5	6	1	1			107		89	8		47	48	12		107	
Allen.	Females.	14	12	8	3				103		96	7		30	37	36		103	
	Total.	84	68	68	33	17	2	2	1,118	12	962	177	1	414	441	270	5	1,130	92
Allen.	Males.	48	37	36	17	7	1	2	622	11	529	103	1	262	253	113	5	633	
	Females.	36	31	32	16	10	1		496	1	423	74		152	188	157		497	
Bartholomew.	Total.	34	28	25	16	3	1		331	2	315	17	1	108	131	92	2	333	
	Males.	18	13	16	10	2	1		174	1	164	11		57	77	41		175	
Benton.	Females.	16	15	9	6	1			157	1	151	6	1	51	54	51	2	158	
	Total.	15	14	9	6		1		118		103	15		43	44	31		118	1
Benton.	Males.	8	6	3	3				63		51	12		23	28	12		63	
	Females.	7	6	3	3		1		55		52	3		20	16	19		55	
Blackford.	Total.	22	13	6	2	1	2		193		188	5		73	80	40		193	
	Males.	11	10	2	1		1		99		98	1		39	46	14		99	
Boone.	Females.	11	3	4	1	1			94		90	4		34	34	26		94	
	Total.	28	39	28	8	5	1		296	3	296	3	3	91	120	88		299	
Boone.	Males.	12	18	14	5	3			145		144	1		47	70	28		145	
	Females.	16	21	14	3	2	1		151	3	152	2		44	50	60		154	
Brown.	Total.	7	10	8	3	2			86		83	3		28	38	20		86	
	Males.	2	5	3	2				33		32	1		11	18	4		33	
Brown.	Females.	5	5	5	1	2			53		51	2		17	20	16		53	
	Total.	24	28	22	5	3	1		208		199	9		53	100	55		208	
Carroll.	Males.	13	12	13	1	1			108		101	7		29	29	23		108	
	Females.	11	16	9	4	2			100		98	2		24	44	32		100	

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non- res.
Cass.....	Total.....	59	48	38	15	9	3	2	579	6	502	81	2	183	238	187	7	585	89
	Males.....	26	21	17	7	4	2	1	318	4	277	43	0	123	135	58	6	322	.....
	Females.....	33	27	21	8	5	1	1	261	2	225	38	.....	60	103	99	1	263	.....
Clark.....	Total.....	33	44	24	12	3	3	.....	383	29	377	34	1	187	148	94	1	412	5
	Males.....	24	20	11	3	2	.....	.....	189	14	187	15	1	93	76	24	1	263	.....
	Females.....	9	24	13	9	2	.....	.....	194	15	190	19	.....	74	73	62	.....	209	.....
Clay.....	Total.....	42	32	17	6	5	.....	.....	387	6	381	32	.....	184	146	83	.....	393	3
	Males.....	23	11	10	4	1	.....	.....	300	2	286	17	.....	100	73	29	.....	302	.....
	Females.....	19	21	7	2	4	.....	.....	187	4	176	15	.....	64	73	54	.....	191	.....
Clinton.....	Total.....	27	33	25	8	3	1	.....	340	1	334	5	2	101	165	74	1	341	4
	Males.....	12	17	10	3	1	.....	.....	177	.....	174	3	.....	59	96	21	1	177	.....
	Females.....	15	16	15	5	2	.....	.....	163	1	160	2	.....	42	69	53	.....	164	.....
Crawford.....	Total.....	15	6	10	3	.....	.....	.....	109	.....	107	2	.....	39	43	27	.....	109	.....
	Males.....	9	4	6	3	.....	.....	.....	65	.....	63	2	.....	25	27	13	.....	65	.....
	Females.....	6	2	4	.....	.....	.....	.....	44	.....	44	.....	.....	14	16	14	.....	44	.....
Davies.....	Total.....	21	26	18	11	3	1	.....	293	2	284	11	.....	122	100	73	.....	295	.....
	Males.....	17	12	7	3	3	.....	.....	156	1	150	7	.....	72	63	23	.....	157	.....
	Females.....	4	14	11	8	.....	.....	.....	137	1	134	4	.....	50	38	50	.....	138	.....
Dearborn.....	Total.....	27	30	21	12	4	1	.....	272	3	230	45	.....	84	110	81	.....	275	.....
	Males.....	13	16	7	3	2	.....	.....	138	2	120	20	.....	40	66	25	.....	140	.....
	Females.....	14	14	14	9	2	.....	.....	134	1	110	25	.....	35	44	56	.....	135	.....
Deatur.....	Total.....	29	22	24	13	7	1	.....	261	1	250	11	1	72	122	66	2	262	3
	Males.....	15	12	13	7	3	.....	.....	148	1	141	7	1	48	73	26	2	149	.....
	Females.....	14	10	11	6	4	.....	.....	113	.....	109	4	.....	24	49	40	.....	113	.....
Dekalb.....	Total.....	35	20	28	8	2	.....	.....	285	.....	256	29	.....	72	144	69	.....	285	8
	Males.....	20	8	15	4	2	.....	.....	153	.....	140	13	.....	42	84	37	.....	153	.....
	Females.....	15	12	13	4	.....	.....	.....	132	.....	116	16	.....	30	60	42	.....	132	.....
Delaware.....	Total.....	62	42	34	9	6	.....	1	616	24	628	12	.....	223	277	140	.....	640	5
	Males.....	34	19	15	3	3	.....	.....	315	16	327	4	.....	134	148	49	.....	331	.....
	Females.....	28	23	19	6	3	.....	1	301	8	301	8	.....	89	129	91	.....	309	.....

Dubois	Total	15	21	9	3	2	184	171	13	80	67	37	184	92	92	1
	Males	9	16	3	1	1	92	92	8	36	41	15	92	41	15	92
	Females	6	5	6	2	1	92	87	5	44	26	22	92	51	77	92
Elkhart	Total	56	74	47	25	1	649	602	44	172	305	168	5	650	9	9
	Males	34	32	22	12	1	350	324	24	108	177	62	4	351	4	4
	Females	22	42	25	13	1	299	278	20	64	128	106	1	299	1	1
Fayette	Total	19	13	13	3	3	161	165	6	43	89	39	171	81	171	171
	Males	8	10	6	2	2	86	86	4	28	48	14	90	86	90	90
	Females	11	3	7	3	1	75	77	4	15	41	25	81	81	81	81
Floyd	Total	38	36	23	11	1	378	360	38	132	171	94	1	368	5	5
	Males	22	22	12	3	1	202	187	24	76	96	38	1	211	1	1
	Females	16	14	11	8	1	176	173	14	56	75	56	187	187	187	187
Fountain	Total	22	25	22	9	2	237	232	6	77	98	63	238	5	238	5
	Males	13	10	8	5	2	109	109	1	36	56	19	110	106	110	106
	Females	9	15	14	4	1	128	124	4	41	43	44	128	128	128	128
Franklin	Total	23	30	18	9	2	212	186	26	73	78	61	212	4	212	4
	Males	10	19	10	3	1	106	94	12	36	43	27	106	106	106	106
	Females	13	11	8	6	1	106	92	14	37	35	34	106	106	106	106
Fulton	Total	25	14	16	15	4	216	203	8	59	97	59	2	217	1	1
	Males	14	6	9	7	2	121	116	5	24	62	24	2	122	2	2
	Females	11	8	7	8	2	95	92	3	35	35	35	95	95	95	95
Gibson	Total	26	31	15	11	3	330	332	15	139	133	75	347	1	347	1
	Males	14	12	7	3	3	159	159	6	79	68	23	170	170	170	170
	Females	12	19	8	8	1	171	170	9	60	65	52	177	177	177	177
Grant	Total	117	93	55	22	5	894	815	29	256	348	297	4	845	23	23
	Males	62	47	26	12	2	497	438	17	157	209	162	3	511	3	3
	Females	25	26	15	10	2	327	327	6	99	139	95	1	334	1	1
Greene	Total	32	22	21	10	3	400	390	11	178	148	75	401	401	401	401
	Males	16	12	8	4	1	198	198	5	98	79	26	198	198	198	198
	Females	10	10	12	6	2	202	197	6	80	69	49	203	203	203	203
Hamilton	Total	39	25	25	14	6	329	327	4	101	152	78	331	6	331	6
	Males	22	15	16	9	2	168	167	2	54	83	30	169	169	169	169
	Females	17	10	9	5	4	161	160	2	47	69	48	162	162	162	162
Hancock	Total	18	23	20	11	6	231	220	12	69	102	61	232	1	232	1
	Males	10	12	8	7	5	120	112	8	39	57	24	120	120	120	120
	Females	8	11	12	4	1	111	108	4	30	45	37	112	112	112	112



TABLE No. 3—Continued.

COUNTIES	Sex.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non- res.
Harrison	Total	24	25	15	9	5	..	1	223	1	207	17	..	69	90	64	1	224	1
	Males	10	10	8	2	2	..	..	110	1	104	7	..	38	50	23	..	111	..
Hendricks	Females	14	15	7	7	3	..	1	113	..	103	10	..	31	40	41	1	113	..
	Total	24	29	17	12	1	1	..	227	6	228	4	1	74	93	65	1	233	4
Henry	Males	12	18	7	6	..	..	..	115	3	115	3	..	40	54	24	..	118	..
	Females	12	11	10	6	1	1	..	112	3	113	1	1	34	39	41	1	115	..
Howard	Total	35	31	26	8	8	..	..	383	3	381	4	1	150	145	89	2	386	6
	Males	22	22	12	3	2	..	..	220	1	218	2	1	100	86	34	1	221	..
Huntington	Females	13	19	11	5	6	..	..	163	2	163	2	..	50	59	55	1	165	..
	Total	32	33	32	10	12	..	..	443	11	437	17	..	153	199	100	2	454	5
Jackson	Males	20	15	18	5	5	..	..	229	10	228	11	..	89	110	39	1	239	..
	Females	12	18	14	5	7	..	..	214	1	209	6	..	64	89	61	1	215	..
Jasper	Total	34	32	34	9	4	1	1	320	11	307	12	2	85	140	94	2	321	1
	Males	17	23	17	5	3	1	1	180	1	173	6	2	53	82	44	2	181	..
Jefferson	Females	17	9	17	4	1	..	..	140	..	134	6	..	32	58	50	..	140	..
	Total	21	24	24	7	2	..	1	314	3	297	19	1	144	113	59	1	317	4
Jennings	Males	11	14	12	5	2	..	..	166	2	160	7	1	81	63	23	1	168	..
	Females	10	10	12	2	..	..	1	148	1	137	12	..	63	50	36	..	149	..
Jay	Total	11	11	13	6	2	..	..	131	..	131	11	..	57	57	28	1	143	1
	Males	4	7	6	3	2	..	..	73	..	67	5	1	30	30	12	1	73	..
Jefferson	Females	7	4	7	3	..	..	..	70	..	64	6	..	27	27	16	..	70	..
	Total	19	27	13	5	4	..	..	267	1	254	14	..	88	126	52	2	268	..
Jennings	Males	9	13	7	4	3	..	..	142	1	136	7	..	42	76	24	1	143	..
	Females	10	14	6	1	1	..	..	125	..	118	7	..	46	50	28	1	125	..
Jennings	Total	42	29	29	15	4	..	..	362	11	351	20	2	107	175	85	6	373	71
	Males	24	13	13	9	1	..	..	200	6	193	11	2	67	102	32	6	206	..
Jennings	Females	18	16	16	6	3	..	..	162	5	158	9	..	40	73	53	1	167	..
	Total	15	28	17	5	..	..	..	183	3	177	9	..	63	73	50	..	186	2
Jennings	Males	11	13	6	2	..	..	..	84	2	84	4	..	34	34	18	..	86	..
	Females	4	15	11	3	..	..	..	99	1	95	5	..	29	39	32	..	100	..

Johnson.....	Total.....	17	20	12	10	7	245	248	8	248	6	97	98	58	1	254
	Males.....	8	6	4	5	3	117	5	120	2	40	51	47	18	1	132
	Females.....	9	14	8	5	4	128	3	128	4	57	40	51	40	1	132
Knox.....	Total.....	32	16	29	6	6	531	7	502	25	1	222	213	92	1	528
	Males.....	16	6	16	2	2	262	4	260	16	1	125	120	40	1	266
	Females.....	13	10	11	4	4	239	3	233	9		97	93	52		242
Kosciusko.....	Total.....	34	36	28	17	3	329	3	319	13	99	142	91			332
	Males.....	20	18	14	10	3	184	1	178	7	62	86	37			185
	Females.....	14	18	14	7	3	145	2	141	6	37	56	54			147
Lagrange.....	Total.....	36	20	15	11	2	177		163	13	1	36	69	71	1	177
	Males.....	17	9	6	5	2	89	82	6	1	27	37	24	1	89	
	Females.....	19	11	9	6		88		81	7		9	32	47		88
Lake.....	Total.....	27	30	22	16	4	1,454	13	1,169	294	4	892	424	137	14	1,467
	Males.....	16	15	10	5	3	864	9	687	202	4	339	274	66	14	893
	Females.....	11	15	12	11	1	570	4	482	92		353	150	71		574
Laporte.....	Total.....	58	43	40	21	6	577	10	454	130	3	240	198	144	5	587
	Males.....	39	30	24	5	1	330	9	256	81	2	160	110	75	4	330
	Females.....	19	13	16	16	5	247	1	198	49	1	90	88	69	1	248
Lawrence.....	Total.....	28	26	24	8	4	417	4	410	11	179	160	82			421
	Males.....	16	13	14	4	1	208	3	203	6	86	90	33			209
	Females.....	12	13	10	4	3	211	1	207	5	93	70	49			212
Madison.....	Total.....	69	46	46	24	5	779	11	757	32	1	280	326	182	2	790
	Males.....	34	21	22	17	1	410	5	396	18	1	153	178	82	2	415
	Females.....	35	25	24	7	4	368	6	361	14		127	148	100		375
Marion.....	Total.....	284	239	165	82	15	9	4,062	505	378	6	1,748	1,834	990	15	4,587
	Males.....	155	109	69	37	7	2,170	269	2,214	219	6	1,006	1,020	390	14	2,439
	Females.....	129	130	96	45	8	1,912	236	1,869	159		742	805	600	1	2,148
Marshall.....	Total.....	24	21	23	9	3	247	2	239	9	1	77	119	52	1	249
	Males.....	13	12	11	5	2	135	2	133	3	1	49	69	18	1	137
	Females.....	11	9	12	4	1	112		106	6		28	50	34		112
Martin.....	Total.....	12	9	8	2		141		140	1		61	59	20	1	141
	Males.....	7	3	3	1		74		74			40	31	3		74
	Females.....	5	6	5	1		67		66	1		21	28	17	1	67
Miami.....	Total.....	32	32	22	9	8	338	2	321	18	1	108	151	78	3	340
	Males.....	18	18	9	7	2	180	2	180	10	1	170	101	55	3	181
	Females.....	14	14	13	2	6	158	1	151	8		53	60	46		159

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 74.										80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non-res.
		70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Harrison.	Total	24	24	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	Males	14	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Hendricks.	Total	24	24	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	Males	12	12	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Henry.	Total	35	35	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
	Males	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Howard.	Total	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
	Males	20	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
Huntington.	Total	34	34	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	Males	17	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Jackson.	Total	21	21	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
	Males	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Jasper.	Total	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	Males	7	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Jay.	Total	19	19	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
	Males	10	10	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Jefferson.	Total	42	42	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
	Males	24	24	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Jennings.	Total	15	15	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Males	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Johnson.....	17	20	12	10	7		246	8	248	6		97	98	58	1	254	.....
Males.....	8	6	4	5	3		117	5	120	2		57	47	18		122	.....
Females.....	9	14	8	5	4		129	3	128	4		40	51	40	1	132	.....
Knox.....	32	16	28	6	6	2	521	7	502	25	1	222	213	92	1	528	12
Males.....	19	6	19	2	2	2	252	4	269	16	1	125	120	40	1	286	.....
Females.....	13	10	11	4	4		239	3	233	9		97	93	52		242	.....
Kosciusko.....	34	36	28	17	3	2	329	3	319	13		99	142	91		332	3
Males.....	20	18	14	10			184	1	178	7		62	86	37		185	.....
Females.....	14	18	14	7	3		145	2	141	6		37	56	54		147	.....
Lagrange.....	36	20	15	11	2	2	177		163	13	1	36	69	71	1	177	.....
Males.....	17	9	6	5	2		89		82	6	1	27	37	24	1	89	.....
Females.....	19	11	9	6			88		81	7		9	32	47		88	.....
Lake.....	27	30	22	16	4	1	1,454	13	1,169	294	4	892	424	137	14	1,467	37
Males.....	16	15	10	5	3		884	9	697	202	4	539	274	66	14	893	.....
Females.....	11	15	12	11	1	1	570	4	462	92		353	150	71		574	.....
Laporte.....	58	43	40	21	6		577	10	454	180	3	240	198	144	5	587	19
Males.....	39	30	24	5	1		380	9	256	81	2	150	110	75	4	339	.....
Females.....	19	13	16	16	5		247	1	198	49	1	90	88	69	1	248	.....
Lawrence.....	28	26	24	8	4	1	417	4	410	11		179	160	82		421	1
Males.....	16	13	14	4	1		206	3	203	6		86	90	33		209	.....
Females.....	12	13	10	4	3	1	211	1	207	5		93	70	49		212	.....
Madison.....	69	46	46	24	5	1	779	11	757	32	1	280	326	182	2	790	8
Males.....	34	21	22	17	1	1	410	5	396	18	1	153	178	82	2	419	.....
Females.....	35	25	24	7	4		396	6	361	14		127	148	100		375	.....
Marion.....	284	239	165	82	15	9	4,082	505	4,203	378	6	1,748	1,834	990	15	4,587	196
Males.....	165	109	69	37	7	7	2,170	269	2,214	219	6	1,008	1,029	580	14	2,439	.....
Females.....	129	130	96	45	8	2	1,912	236	1,989	159		743	805	600	1	2,148	.....
Marshall.....	24	21	23	9	3		247	2	239	9	1	77	119	52	1	249	.....
Males.....	13	12	11	5	2		135	2	133	3	1	49	60	18	1	137	.....
Females.....	11	9	12	4	1		112		106	6		28	50	34		112	.....
Martin.....	12	9	8	2			141		140	1		61	59	20	1	141	1
Males.....	7	3	3	1			74		74			40	31	3		74	.....
Females.....	5	6	5	1			67		66	1		20	28	17	1	67	.....
Miami.....	32	32	22	9	8		338	2	321	18	1	108	151	78	3	340	7
Males.....	18	16	9	7	2		190	1	170	10	1	55	91	32	3	181	.....
Females.....	14	14	13	2	6		138	1	151	8		53	60	46		159	.....

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non- res.
Monroe	Total	28	21	20	9	4	—	—	316	8	315	8	1	126	130	68	—	324	1
	Males	16	10	10	5	—	—	—	151	5	151	4	1	66	66	24	—	156	—
	Females	9	11	10	4	3	—	—	165	3	164	4	—	60	64	44	—	168	—
Montgomery	Total	47	31	29	17	6	1	—	365	6	365	6	—	110	156	105	—	371	5
	Males	20	10	11	9	3	—	—	177	2	177	2	—	41	83	35	—	179	—
	Females	18	21	18	8	3	1	—	188	4	190	4	—	49	73	70	—	192	—
Morgan	Total	26	27	21	9	4	—	—	243	2	244	6	—	79	101	70	—	250	8
	Males	13	8	13	5	1	—	—	137	1	134	4	—	49	65	24	—	138	—
	Females	13	19	8	4	3	—	—	111	1	110	2	—	30	36	46	—	112	—
Newton	Total	7	9	7	4	—	1	—	99	—	87	12	—	39	42	18	—	99	—
	Males	6	5	5	1	—	—	—	50	—	41	9	—	17	26	7	—	50	—
	Females	1	4	2	3	—	1	—	49	—	46	3	—	22	16	11	—	49	—
Noble	Total	35	41	27	9	3	1	—	273	—	256	17	—	53	134	86	—	273	2
	Males	19	21	12	4	2	—	—	147	—	137	10	—	42	73	32	—	147	—
	Females	16	20	15	5	1	1	—	126	—	119	7	—	11	61	54	—	126	—
Ohio	Total	5	5	6	5	—	—	1	50	3	49	4	—	20	18	14	—	53	—
	Males	5	4	3	2	—	—	—	28	2	20	1	—	11	11	7	—	30	—
	Females	—	1	3	3	—	—	1	22	1	20	3	—	9	7	7	—	23	—
Orange	Total	15	6	10	9	2	2	—	185	1	184	1	—	72	73	40	—	186	4
	Males	5	3	6	5	1	1	—	94	1	94	1	—	39	43	12	—	95	—
	Females	10	3	4	4	1	1	—	91	—	90	—	—	33	30	28	—	91	—
Owen	Total	21	11	18	3	3	—	—	134	2	131	3	—	30	65	41	—	136	—
	Males	12	6	8	2	1	—	—	69	1	69	1	—	15	36	19	—	70	—
	Females	9	5	10	1	2	—	—	65	1	62	2	—	15	29	22	—	66	—
Park	Total	20	19	27	7	—	1	—	271	3	269	5	—	103	92	79	—	274	21
	Males	12	8	17	3	—	—	—	133	3	120	4	—	61	46	36	—	133	—
	Females	8	11	10	4	—	1	—	138	—	140	1	—	52	46	43	—	141	—
Perry	Total	9	11	16	7	3	—	—	199	2	185	15	—	79	77	45	—	201	1
	Males	7	3	7	4	1	—	—	101	1	92	10	—	42	43	17	—	102	—
	Females	2	8	9	3	2	—	—	98	1	93	5	—	36	35	28	—	99	—

Fike.....	Total.....	21	14	11	3	1	1	1	257	3	256	4	113	100	47	290
Males.....	11	7	5	2	1	1	1	1	130	3	126	3	60	54	19	133
Females.....	10	7	6	1	1	1	1	1	127	1	126	1	53	46	28	127
Porter.....	Total.....	19	24	16	10	6	1	2	237	199	36	2	71	101	61	237
Males.....	12	13	7	4	2	2	2	2	124	7	103	19	2	20	3	124
Females.....	7	11	9	6	4	4	1	1	113	96	17	31	40	41	1	113
Poey.....	Total.....	18	12	13	4	2	2	1	185	9	180	14	66	82	42	194
Males.....	11	8	6	3	1	1	1	1	98	3	96	6	41	43	17	101
Females.....	7	4	7	1	1	1	1	1	87	6	84	8	28	39	25	93
Pulaski.....	Total.....	18	17	9	5	2	2	1	181	160	20	1	66	65	49	181
Males.....	10	9	4	1	1	1	1	1	93	83	9	1	41	32	19	93
Females.....	8	8	5	4	1	1	1	1	88	77	11	25	25	33	30	88
Putnam.....	Total.....	24	19	23	6	2	2	1	233	2	228	5	61	111	63	235
Males.....	13	9	11	4	2	1	1	1	126	120	4	2	36	66	24	126
Females.....	11	10	12	2	1	1	1	1	107	2	108	1	25	45	39	109
Randolph.....	Total.....	39	36	22	22	3	3	1	373	3	364	11	140	141	94	376
Males.....	26	23	13	8	1	1	1	2	192	1	187	5	73	76	43	193
Females.....	13	13	9	14	2	1	1	1	181	2	177	6	67	65	51	183
Ripley.....	Total.....	20	17	20	16	4	4	1	239	1	200	39	67	98	73	240
Males.....	11	9	9	2	3	1	1	1	117	1	100	17	40	53	24	118
Females.....	9	8	11	14	1	1	1	1	122	1	100	22	27	45	49	122
Rush.....	Total.....	39	23	24	10	7	7	1	246	8	241	13	71	118	65	254
Males.....	18	17	14	4	5	2	2	1	141	5	139	7	46	67	33	146
Females.....	21	6	10	6	2	1	1	1	105	3	102	6	25	51	32	108
Scott.....	Total.....	11	13	8	1	1	1	1	110	108	2	2	49	32	29	110
Males.....	7	3	7	1	1	1	1	1	86	86	2	2	29	15	12	86
Females.....	4	10	1	1	1	1	1	1	54	22	22	2	20	17	17	54
Shelby.....	Total.....	30	27	26	14	3	3	1	313	3	304	12	95	135	86	316
Males.....	17	16	15	10	2	1	1	1	176	2	172	8	54	88	36	178
Females.....	13	11	11	4	1	1	1	1	137	1	132	6	41	47	50	138
Spencer.....	Total.....	19	13	18	7	5	1	1	202	11	194	16	75	73	65	213
Males.....	8	4	11	2	4	1	1	1	92	4	88	8	41	27	15	96
Females.....	11	9	7	5	1	1	1	1	110	7	106	8	34	36	47	117
Stark.....	Total.....	12	8	9	5	4	4	3	125	107	18	18	43	60	22	125
Males.....	8	4	6	4	3	1	1	1	63	53	9	9	17	26	9	63
Females.....	4	4	3	1	1	1	1	1	62	54	9	9	26	24	13	62

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non- res.
Steuben.....	Total.....	14	22	13	9	4			166	1	164	2	1	32	83	49	3	167	
	Males.....	7	15	7	5	2			88	1	89			27	44	17	1	89	
	Females.....	7	7	6	4	2			78		75	2	1	5	39	32	2	78	
St. Joseph.....	Total.....	82	67	47	28	9	4		1,087	15	803	287	3	435	419	234	5	1,093	33
	Males.....	49	34	23	13	6	2		608	13	442	168	2	268	245	94	5	612	
	Females.....	33	33	24	16	3	2		479	2	361	119	1	167	174	140		481	
Sullivan.....	Total.....	25	23	17	8	7			381	1	368	14		174	140	67	1	392	1
	Males.....	13	11	9	4	3			198	1	189	10		96	84	18	1	199	
	Females.....	12	12	8	4	4			183		179	4		78	56	49		183	
Switzerland.....	Total.....	16	15	13	7	3	2		132	1	126	7		38	59	36		133	
	Males.....	7	6	9	6	2			76		74	3		29	33	15		77	
	Females.....	9	9	4	1	1	2		56		52	4		9	26	21		56	
Tipperance.....	Total.....	70	74	56	24	9			662	8	586	83	1	184	296	186	4	670	61
	Males.....	37	37	33	14	3			344	5	316	32	1	107	164	75	3	349	
	Females.....	33	37	23	10	6			318	3	270	51		77	132	111	1	321	
Tipton.....	Total.....	17	20	13	9	1		1	221		213	8		75	89	66	1	221	
	Males.....	8	14	5	5	1			111		111	4		40	45	29	1	116	
	Females.....	9	6	8	4			1	106		102	4		35	44	27		106	
Union.....	Total.....	9	4	9	2	3			78		76	2		27	38	13		78	
	Males.....	6	4	4	2	1			49		48	1		18	27	4		49	
	Females.....	3		5		2			29		28	1		9	11	9		29	
Vanderburgh.....	Total.....	75	74	44	12	2	4		3,130	131	1,121	146	3	510	499	257	4	1,270	94
	Males.....	41	39	23	7	2	3		2,642	71	625	85	3	304	291	114	4	713	
	Females.....	34	35	21	5		1		497	60	496	61		206	208	143		557	
Vermillion.....	Total.....	28	16	10	4	1	2		311	10	300	20	1	166	111	53	1	321	
	Males.....	16	10	5			1		177	7	169	14	1	99	65	19	1	184	
	Females.....	12	6	5	4	1	1		134	3	131	6		57	46	34		137	
Vigo.....	Total.....	69	72	59	23	8	2		1,292	62	1,267	82	5	588	465	293	8	1,354	38
	Males.....	36	37	31	10	3	2		720	39	706	49	4	352	271	130	0	759	
	Females.....	33	35	28	13	5			572	23	561	33	1	236	194	163	2	596	

Wabash.....	Total.....	39	19	25	17	5	1	301	2	289	13	1	86	142	72	3	303
	Males.....	17	14	11	7	2	1	159	1	150	9	1	55	83	19	3	160
Females.....		21	5	14	10	3	1	142	1	139	4		31	59	53		143
Warren.....	Total.....	12	12	10	4	1		122		117	5		41	55	26		122
	Males.....	9	6	5	2	1		63		61	3		21	34	8		63
Females.....		3	6	5	2			59		56	3		20	21	18		59
Warrick.....	Total.....	16	16	25	1	1		266	7	261	12		108	116	49		273
	Males.....	11	11	14	1	1		145	6	145	6		57	72	22		151
Females.....		5	5	11				121	1	116	6		51	44	27		122
Washington.....	Total.....	21	17	9	7	3	1	191		189	2		72	81	38		191
	Males.....	11	9	7	3	2	1	109		109			42	55	12		109
Females.....		10	8	2	4	1		82		80	2		30	26	26		82
Wayne.....	Total.....	66	59	50	31	9	2	627	31	609	47	2	206	285	184	3	658
	Males.....	36	30	26	16	2	1	323	20	316	25	2	104	163	73	3	343
Females.....		30	29	24	15	7	2	304	11	293	22		102	102	111		315
Wells.....	Total.....	24	12	16	13	2		194		188	6		56	97	41		194
	Males.....	12	6	8	8	1		109		106	3		37	55	17		109
Females.....		12	6	8	5	1		85		82	3		19	42	24		85
White.....	Total.....	16	23	14	8	3		184		175	9		50	92	42		184
	Males.....	10	13	10	4	2		100		96	5		28	57	16		100
Females.....		6	10	4	4	1		84		80	4		22	35	27		84
Whitley.....	Total.....	17	20	9	8	3	3	167	2	160	8	1	50	67	51	1	169
	Males.....	9	9	5	3	2	1	82	1	77	5	1	24	40	18	1	83
Females.....		8	11	4	5	1	2	85	1	83	3		26	27	33		86
Grand Total.....	Total.....	3,021	2,703	2,176	1,015	356	72	27,347	1,096	33,003	2,795		13,041	14,442	8,249	137	35,869
	Males.....	1,690	1,384	1,105	486	171	36	18,599	7,616	17,568	1,562	57	7,581	8,249	3,273	114	19,217
	Females.....	1,331	1,319	1,071	529	185	36	9,167	480	15,435	1,203	14	5,460	6,193	4,976	23	16,652

\* 1 Indian. † 1 Chinese.



TABLE No. 3—Continued.

COUNTIES.	Sax.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 to and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non-rest.
Steuben.....	Total Males Females	14 7 7	22 15 7	13 7 6	9 5 4	4 2 2			166 88 78	1 1	164 89 75	2 3 2	1 1 1	32 27 5	83 44 39	49 17 32	3 1 2	167 89 78	
St. Joseph.....	Total Males Females	82 49 33	67 34 33	47 23 24	28 12 16	9 6 3	4 2 2		1,087 608 479	15 13 2	803 442 361	287 168 119	3 3 1	435 268 174	419 245 174	224 94 140	5 5 1	1,093 612 481	33
Sullivan.....	Total Males Females	25 13 12	23 11 12	17 9 8	8 4 4	7 3 4			381 198 183	1 1 1	368 189 179	14 10 4		174 96 78	140 84 56	67 13 49	1 1 1	382 199 183	1
Switzerland.....	Total Males Females	16 7 9	15 6 9	13 9 4	7 6 1	3 2 1	2 2		132 76 56	1 1 1	126 74 52	7 3 3		38 29 9	59 33 26	36 15 21		133 77 56	
Tipperance.....	Total Males Females	70 37 33	74 37 37	56 33 23	24 14 10	9 3 6			662 344 318	8 5 3	586 316 270	83 32 51	1 1 1	184 107 77	208 164 132	186 75 111	4 3 1	670 349 321	61
Tipton.....	Total Males Females	17 8 9	20 14 6	13 5 8	9 5 4	1 1 4		1	221 115 106		213 111 102	8 4 4		75 40 35	89 45 44	56 29 27	1 1 1	221 115 106	
Union.....	Total Males Females	9 6 3	4 4 5	9 4 5	2 2 2	3 2 2			78 49 29		76 48 28	2 1 1		27 18 9	38 27 11	13 4 9		78 49 29	
Vanderburgh.....	Total Males Females	75 41 34	74 39 35	44 23 21	12 7 5	2 2 1	4 3 1	3	1,139 642 497	131 71 60	1,121 625 496	146 85 61	3 3 1	510 304 206	499 291 208	257 114 143	4 4 1	1,270 713 557	94
Vermillion.....	Total Males Females	28 16 12	16 10 6	10 5 5	4 4 4	1 1 1		1	311 177 134	10 7 3	300 169 131	20 14 6		156 99 57	111 65 46	53 19 34	1 1 1	321 184 137	
Vigo.....	Total Males Females	69 36 33	72 37 35	59 31 28	23 10 13	8 3 5	2 2 2		1,292 720 572	62 39 23	1,267 706 561	82 49 33	5 4 1	538 352 236	465 271 194	293 130 163	8 7 2	1,354 759 595	38

Waushab.	Total.	39	19	25	17	5	1	301	2	289	13	1	86	142	72	3	303
	Males.	17	14	11	7	2	1	159	1	150	9	1	55	83	19	3	190
	Females.	21	5	14	10	3	1	142	1	139	4	1	31	59	53	1	143
Warren.	Total.	12	12	10	4	1	1	122	117	5	5	41	55	26	122	1	122
	Males.	9	6	5	2	1	1	63	61	2	2	21	34	8	63	1	63
	Females.	3	6	5	2	1	1	59	56	3	3	20	21	18	59	1	59
Warrick.	Total.	16	16	25	1	1	1	266	7	261	12	108	116	49	273	1	273
	Males.	11	11	14	1	1	1	145	6	143	6	87	72	22	151	1	151
	Females.	5	5	11	1	1	1	121	1	116	6	21	44	27	122	1	122
Washington.	Total.	21	17	9	7	3	1	191	189	2	2	72	81	38	191	1	191
	Males.	11	9	7	3	2	1	109	109	1	1	42	55	12	109	1	109
	Females.	10	8	2	4	1	1	82	80	2	2	30	26	26	82	1	82
Wayne.	Total.	66	59	50	31	9	2	627	31	609	47	2	206	265	184	3	658
	Males.	36	30	26	16	2	1	323	20	316	25	2	104	133	73	3	343
	Females.	30	29	24	15	7	2	304	11	293	22	1	102	102	111	1	315
Wells.	Total.	24	12	16	13	2	1	194	188	6	6	56	97	41	194	1	194
	Males.	12	6	8	8	1	1	109	106	3	3	37	55	17	109	1	109
	Females.	12	6	8	5	1	1	85	82	3	3	19	42	24	85	1	85
White.	Total.	16	23	14	8	3	1	184	175	9	9	50	92	42	184	1	184
	Males.	10	13	10	4	2	1	100	95	5	5	28	57	15	100	1	100
	Females.	6	10	4	4	1	1	84	80	4	4	22	35	27	84	1	84
Whitley.	Total.	17	20	9	8	3	3	167	2	160	8	1	50	67	51	1	169
	Males.	9	9	5	3	2	1	82	1	77	5	1	24	40	18	1	83
	Females.	8	11	4	5	1	2	85	1	83	3	1	26	27	33	1	86
Grand Total.	Total.	3,021	2,703	2,176	1,015	356	72	27,347	1,096	33,003	2,795	71	13,041	14,442	8,249	137	35,869
	Males.	1,690	1,394	1,105	486	171	36	18,599	1,616	17,563	1,592	57	7,581	8,249	3,273	114	19,217
	Females.	1,331	1,319	1,071	529	185	36	9,167	480	15,435	1,203	14	5,460	6,193	4,976	23	16,652

\* 1 Indian. † 1 Chinese.

TABLE No. 3—Continued.

COUNTIES.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.	Non-rep- dents.
Steuben.....	14 Males 7 Females	22 15 7	13 7 6	9 5 4	4 2 2			166 88 78	1 1	164 89 75	2 2	1	32 27 5	83 44 39	49 17 32	3 1 2	167 89 78	
St. Joseph.....	82 Males 49 Females	67 47 34	47 23 24	28 12 16	9 6 3	4 2 2		1,087 608 479	15 13 2	803 442 361	287 168 119	3	435 268 167	419 245 174	224 94 140	5 5 1	1,093 612 481	33
Sullivan.....	25 Males 13 Females	23 11 12	17 8 4	8 4 4	7 2 4			381 188 183	1 1	368 189 179	14 10 4		174 106 78	140 84 56	67 18 49	1 1	382 189 183	1
Switzerland.....	16 Males 7 Females	15 9 9	13 9 4	7 6 1	2 1 1	2		132 76 56	1	126 74 52	7 2 4		38 26 9	59 33 20	36 15 21		133 77 56	
Tipecanoe.....	70 Males 37 Females	74 37 37	56 33 23	24 14 10	9 3 6			682 344 318	8 5 3	586 316 270	83 32 51	1	184 107 77	208 184 132	186 75 111	4 3 1	670 349 321	61
Tipton.....	17 Males 8 Females	20 14 6	13 5 8	9 5 4	1 1 4			221 115 106		213 111 102	8 4 4		75 40 35	89 45 44	56 26 27	1 1 1	221 115 106	
Union.....	9 Males 6 Females	4 4 4	9 4 5	2 2 2	3 2 2			78 40 29		76 48 28	2 1		27 18 9	38 27 11	13 4 9		78 40 29	
Vanderburgh.....	75 Males 41 Females	74 39 34	44 23 21	12 7 5	2 2 5	4 3 1	3	1,139 642 497	131 71 60	1,121 625 486	146 85 61	3	510 304 206	499 291 208	257 114 143	4 4 1	1,270 713 537	94
Vermillion.....	28 Males 16 Females	16 10 6	10 5 5	4 4 4	1 1 1	2 1 1		311 177 134	10 7 3	300 169 131	20 14 6		156 99 57	111 65 46	53 19 34	1 1 1	321 184 137	
Vigo.....	69 Males 36 Females	72 37 35	59 31 28	23 10 13	8 3 5	2 2 2		1,292 720 572	62 39 23	1,267 706 561	82 49 33	5	588 352 236	465 271 194	293 130 163	8 0 2	1,354 759 598	38

Wabash.....	Total.....	39	197	25	17	5	1	301	2	289	13	1	86	142	72	3	303
	Males.....	17	14	11	7	2	1	150	1	150	9	1	55	83	19	3	160
	Females.....	21	5	14	10	3	1	142	1	139	4	1	31	59	53	1	143
Warren.....	Total.....	12	12	10	4	1	1	122	117	5	41	55	26	122			
	Males.....	9	6	5	2	1	61	63	56	3	21	24	8	83			
	Females.....	3	6	5	2	1	59	59	56	3	20	21	18	59			
Warrick.....	Total.....	16	16	25	1	1	1	266	7	261	12	108	116	49	273		
	Males.....	11	11	14	1	1	145	6	145	6	145	57	72	32	151		
	Females.....	5	5	11	1	1	121	1	116	6	116	51	44	27	122		
Washington.....	Total.....	21	17	9	7	3	1	191	189	2	189	2	72	81	38	191	
	Males.....	11	9	7	3	2	1	109	109	42	109	42	55	12	109		
	Females.....	10	8	2	4	1	1	82	80	2	80	30	26	26	82		
Wayne.....	Total.....	66	59	50	31	9	2	627	31	609	47	2	206	265	184	3	658
	Males.....	36	30	26	16	2	2	323	20	316	25	2	104	163	73	3	343
	Females.....	30	29	24	15	7	2	304	11	293	22	2	102	102	111	3	315
Wells.....	Total.....	24	12	16	13	2	1	194	188	6	188	6	56	97	41	194	
	Males.....	12	6	8	8	1	1	100	100	3	100	3	37	55	17	109	
	Females.....	12	6	8	5	1	1	85	83	3	83	3	19	42	24	85	
White.....	Total.....	16	23	14	8	3	3	184	175	9	50	92	42	184	1	184	
	Males.....	10	13	10	4	2	3	100	95	5	5	28	57	15	100		
	Females.....	6	10	4	4	1	1	84	80	4	4	22	35	27	84		
Whitley.....	Total.....	17	20	9	8	3	3	167	2	160	8	1	50	67	51	1	169
	Males.....	9	9	5	3	2	1	82	1	77	5	1	24	40	18	1	83
	Females.....	8	11	4	5	1	2	85	1	83	3	1	26	27	33	1	86
Grand Total.....	Total.....	3,021	2,703	2,176	1,015	356	72	27,547	1,096	33,003	2,785	57	13,041	14,442	8,249	137	35,869
	Males.....	1,690	1,384	1,105	486	171	36	18,569	+616	17,568	1,592	71	7,581	8,249	3,273	114	19,217
	Females.....	1,331	1,319	1,071	529	185	36	9,161	480	15,435	1,203	14	5,460	6,193	4,976	23	16,652

\* 1 Indian. † 1 Chinese.

TABLE No. 4.  
*Number of Deaths from All Causes, and Rate Per 1,000 Population. Important Ages. Important Causes.*

STATE AND COUNTIES.	IMPORTANT AGES.										DEATHS FROM IMPORTANT CAUSES.															
	Population.	Total Deaths Reported— All Causes, Year 1914.	Death Rate Per 1,000						Typhoid Fever.	Diphtheria and Group.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhoea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Polio-myelitis.	Influenza.	Puerperal Septicæmia.	Cancer.	External Causes.	Smallpox.	Deaths of Non- Residents.			
			Under 1 Year.	1 to 4, Inclusive.	5 to 9, Inclusive.	10 to 14, Inclusive.	15 to 19, Inclusive.	65 Years and Over.																		
State . . . . .	2,796,957	35,869	12.8	5,452	2,107	739	532	869	120	3,471	606	591	385	114	151	295	2,860	1,627	81	27	292	220	2,193	2,748	8	8
Northern Counties...	972,129	11,804	12.8	1,973	648	242	131	252	4,148	875	128	200	124	29	18	76	910	587	11	10	80	73	809	980	2	2
Adams.....	21,936	210	9.5	31	5	8	4	2	79	19	3	11	2	2	2	1	3	3	3	3	4	1	17	17	1	1
Allen.....	99,029	1,130	11.4	156	40	30	16	28	355	76	10	12	22	4	2	9	71	31	3	5	6	7	92	110	92	92
Benton.....	12,688	118	9.3	18	7	1	1	2	49	8	3	2	1	1	1	3	12	7	1	1	7	1	15	9	1	1
Blackford.....	16,045	193	12.0	36	14	6	2	4	64	14	2	2	1	1	1	1	18	11	1	1	3	2	12	8	1	1
Carroll.....	17,976	208	11.5	33	7	6	4	99	12	4	6	6	2	2	1	2	19	15	1	1	3	2	12	8	1	1
Cass.....	37,220	585	15.7	58	25	3	8	11	218	51	6	40	2	1	1	7	42	17	1	1	4	1	31	46	1	89
Dekalb.....	25,279	285	11.2	29	9	3	6	10	123	17	6	6	6	1	1	3	8	11	1	1	5	3	23	22	2	8
Elkhart.....	50,445	650	12.8	79	21	20	4	11	269	35	1	9	15	1	3	8	47	11	1	1	5	3	78	55	9	9
Fulton.....	16,879	217	12.8	31	7	4	1	4	88	17	1	1	1	1	1	2	18	9	1	1	1	1	14	16	1	1
Grant.....	52,032	845	16.2	96	39	21	8	16	374	66	7	6	16	2	2	2	60	23	6	6	7	6	54	54	22	22
Howard.....	35,097	454	12.9	69	31	12	5	10	156	51	8	11	6	1	1	5	57	22	1	1	4	3	30	24	5	5
Huntington.....	29,216	321	10.9	30	19	4	2	7	138	17	3	10	2	1	1	2	29	9	1	1	3	4	24	28	1	1
Jasper.....	13,083	143	10.9	25	9	3	8	57	10	3	1	2	1	1	1	2	10	7	1	1	2	3	16	6	1	1
Jay.....	25,060	268	10.6	48	14	7	2	6	95	28	3	3	1	1	1	1	20	12	1	1	3	1	17	15	1	1
Kosciusko.....	28,068	332	11.8	38	16	6	8	8	150	28	6	3	1	1	1	1	18	4	4	1	3	1	26	30	3	3



TABLE No. 4—Continued.

STATE AND COUNTIES.	IMPORTANT AGES.		DEATHS FROM IMPORTANT CAUSES.																						
	Under 1 Year.	1 to 4, Inclusive.	5 to 9, Inclusive.	10 to 14, Inclusive.	15 to 19, Inclusive.	20 Years and Over.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhoea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomylitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.	Deaths of Non-Residents.		
Total Deaths Reported - All Causes, Year 1914.	Population.	Death Rate Per 1,000																							
Owen	14,053	136	9.6	8	8	1	3	2	62	15	5	5	1	1	13	2	2	6	1	11	4	4	4	21	
Parke	22,214	274	12.3	40	18	5	4	14	96	46	6	8	3	3	11	15	1	1	3	3	14	16	16	2	
Putnam	20,556	235	11.4	24	7	1	9	7	100	33	5	2	3	3	9	5	1	1	1	1	23	23	23	1	
Randolph	29,325	376	12.8	47	17	11	10	9	154	39	9	5	5	1	29	9	9	2	2	3	23	26	26	2	
Rush	19,463	254	13.0	19	12	7	3	8	123	30	6	5	1	1	15	6	1	1	1	15	17	17	17	1	
Shelby	27,501	316	11.4	42	8	5	5	8	131	39	5	5	2	2	28	9	1	1	1	1	18	14	14	3	
Tipton	40,651	670	16.4	60	23	11	5	11	287	51	6	8	2	1	51	18	7	1	5	5	49	64	64	61	
Union	17,552	221	12.5	35	12	3	1	8	84	23	7	2	2	4	21	7	1	1	1	2	13	18	18	7	
Vermilion	6,260	78	12.4	7	2	1	1	2	34	6	1	1	2	1	2	1	1	1	1	1	8	7	7	1	
Vero	19,948	321	16.1	79	32	9	4	9	91	28	4	1	2	26	4	25	33	2	1	5	4	15	31	38	
Warren	95,697	1,354	14.1	219	104	41	23	33	314	142	21	22	1	1	8	10	11	10	7	70	159	159	4		
Wayne	10,899	122	11.2	22	3	4	1	1	50	4	2	1	5	4	1	8	10	3	3	38	62	62	41		
Wayne	45,191	658	14.5	77	21	9	9	19	273	46	9	7	5	4	13	13	11	3	3	38	62	62	41		
Southern Counties.	672,551	8,317	12.3	1,307	611	139	146	218	2,642	1,010	165	172	98	32	76	131	640	422	14	11	96	60	426	541	2
Clark	30,260	412	13.6	76	33	2	6	9	141	53	7	5	4	4	38	26	1	2	2	2	21	23	23	5	
Crawford	12,057	109	9.0	9	9	1	3	5	41	23	2	1	3	1	4	4	1	4	1	3	4	4	4	4	
Davies	27,747	295	10.6	57	16	8	10	9	101	44	2	3	6	6	16	16	1	1	1	1	16	19	19	3	
Dearborn	21,621	275	12.7	20	13	6	5	4	119	29	6	3	3	3	30	6	1	2	2	2	18	16	16	1	
Dubois	19,843	184	9.2	35	9	5	4	7	63	21	3	9	3	3	12	13	1	6	6	6	6	11	11	1	
Floyd	30,344	398	13.1	48	13	4	8	11	137	60	10	3	5	5	19	19	19	7	7	7	29	28	28	5	
Gibson	30,257	347	11.4	55	28	9	7	11	106	42	7	11	5	2	19	20	20	3	3	3	15	19	19	1	
Greene	39,375	401	10.1	87	46	7	6	9	116	42	7	9	9	2	33	33	2	9	5	16	21	21	1		
Harrison	23,232	224	11.0	31	5	5	4	3	99	24	1	7	2	1	14	9	1	8	2	15	15	15	1		
Jackson	24,727	317	12.8	62	27	17	5	4	97	42	14	8	5	1	34	17	1	4	4	13	19	19	4		

Jefferson...	20,483	373	18.2	20	5	3	12	147	43	2	7	1	1	10	6	1	3	3	31	33	71
Jennings...	14,280	586	13.0	20	14	4	4	83	24	4	3	1	1	8	5	1	4	1	12	17	2
Knox...	31,082	528	12.8	97	51	13	17	125	51	15	17	4	8	9	25	1	3	7	26	50	12
Lawrence...	32,082	421	13.1	80	42	18	8	117	63	19	7	9	15	7	27	1	1	16	23	1	1
Martin...	13,181	141	10.7	33	16	3	2	37	18	3	4	3	1	7	13	1	4	1	4	4	1
Ohio...	4,329	53	12.2	9	1	1	1	26	3	3	12	2	1	5	2	1	1	1	7	7	4
Orange...	17,329	186	10.7	27	17	1	6	53	28	3	12	2	6	5	10	1	1	2	6	9	4
Perry...	16,281	261	10.9	32	23	4	6	68	25	7	7	4	5	3	19	1	5	2	8	9	4
Pike...	14,884	200	13.2	19	22	9	4	68	27	7	7	4	1	3	15	1	4	2	8	1	1
Poey...	21,796	194	8.9	31	15	3	4	6	59	24	6	1	2	1	9	1	2	3	5	18	1
Ripley...	19,680	240	12.1	37	5	3	4	108	19	6	8	2	1	4	6	1	4	1	21	11	1
Scott...	8,726	110	12.6	17	9	2	5	3	12	5	9	2	1	4	7	1	2	12	8	1	1
Spencer...	20,678	213	10.3	30	12	6	4	86	22	2	4	4	2	4	9	1	1	14	10	1	1
Sullivan...	34,368	382	11.1	80	39	10	6	16	98	27	14	4	3	7	36	1	5	5	20	31	1
Switzerland...	9,914	133	13.4	11	6	2	3	68	19	3	1	1	1	12	1	1	2	1	12	9	1
Vanderburgh...	80,630	1,270	15.7	173	83	28	14	32	287	173	15	10	3	18	64	2	1	9	57	87	94
Warrick...	22,193	272	12.3	46	20	8	6	10	78	28	9	7	3	6	41	1	7	1	11	14	1
Washington...	17,445	191	10.9	28	22	1	4	5	78	23	2	4	1	2	5	1	3	3	8	10	1
Urban...	1,246,315	17,840	14.3	2,848	1,090	424	250	433	4,784	1,681	105	305	64	82	110	52	89	112	1,098	1,546	2
Rural...	1,550,642	18,009	11.6	2,604	1,008	315	282	438	7,230	1,790	501	286	192	69	183	29	203	108	1,064	1,202	6



TABLE No. 5.

*Death Rates by Counties, All Causes, Per 1,000 Population. Important Causes Per 100,000 (Stillbirths Excluded).*

STATE AND COUNTIES.	Population.	Total Deaths Reported—All Causes, Year 1914.	Death Rate Per 1,000 Population.	DEATH RATE PER 100,000 POPULATION FROM IMPORTANT CAUSES.																	Deaths of Non-residents.
				Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Group.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhoea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Polyneuritis.	Influenza.	Periperal Septicæmia.	Cancer.	External Causes.	Smallpox.		
State.....	2,796,957	35,899	12.8	124.1	21.6	21.1	13.7	4.0	5.4	10.5	102.3	58.2	2.8	.9	10.4	7.8	78.4	98.3	.2	.....	
Northern Counties.....	972,129	11,804	12.8	90.0	13.1	20.5	12.7	2.9	1.8	7.8	93.6	60.3	1.1	1.0	8.2	7.5	83.2	100.8	.2	.....	
Adams.....	21,936	210	9.5	86.6	13.6	50.1	9.1	9.1	.....	4.5	13.6	13.6	.....	.....	18.2	4.5	77.5	77.5	.....	.04	
Allen.....	99,029	1,130	11.4	76.7	10.1	12.1	22.2	4.0	.....	9.0	71.7	31.3	3.0	.....	6.0	7.0	92.9	111.1	.....	.9	
Benton.....	12,688	118	9.3	63.1	23.6	15.7	.....	.....	.....	23.6	94.6	55.2	.....	.....	.....	.....	82.9	94.8	.....	.07	
Blackford.....	16,045	183	12.0	87.2	12.4	12.4	6.2	6.2	.....	6.2	49.8	68.5	6.2	6.2	43.6	6.2	92.5	96.1	6.3	.....	
Carroll.....	17,976	208	11.5	64.7	23.2	33.4	.....	.....	5.5	11.1	105.8	27.8	.....	.....	13.2	11.1	66.7	44.5	.....	.....	
Cass.....	37,220	585	15.7	137.1	16.1	107.5	5.3	2.6	.....	18.8	112.8	45.6	.....	.....	10.7	2.6	83.3	123.6	.....	.2	
Dekalb.....	25,279	285	11.2	67.2	23.7	23.7	.....	.....	.....	11.8	31.6	31.6	3.9	.....	19.7	11.8	91.0	87.0	.....	.3	
Elkhart.....	50,445	650	12.8	69.3	1.9	17.8	29.7	1.9	5.9	15.8	93.1	21.8	1.9	1.9	9.9	5.9	144.7	109.0	.....	.1	
Fulton.....	16,879	217	12.8	100.7	5.9	5.9	.....	.....	.....	.....	106.7	53.3	.....	.....	6.9	5.9	82.9	94.8	.....	.05	
Grant.....	52,032	845	16.2	126.8	13.4	11.5	30.7	3.8	3.8	3.8	115.3	44.2	.....	.....	13.4	11.5	103.8	103.8	.....	.4	
Howard.....	35,097	454	12.9	145.3	22.8	31.3	14.2	.....	.....	.....	162.4	62.6	.....	2.8	11.4	8.5	85.4	68.3	.....	.1	
Huntington.....	29,216	321	10.9	58.2	10.2	34.2	6.8	3.4	.....	.....	99.3	30.8	.....	.....	10.2	13.6	82.1	95.8	.....	.03	
Jasper.....	13,083	143	10.9	76.4	22.9	7.6	15.2	.....	.....	15.2	76.4	53.5	.....	.....	15.2	.....	114.7	45.8	.....	.07	
May.....	23,060	268	10.6	111.7	11.9	11.9	.....	8.9	3.9	7.9	79.8	47.8	.....	3.5	11.9	3.9	67.8	59.8	.....	.....	
Kosciusko.....	25,068	332	11.8	89.8	21.3	10.6	13.5	3.5	3.5	.....	64.1	44.2	.....	.....	10.6	13.2	89.0	106.9	.....	.1	
Lagrange.....	15,143	177	11.6	89.6	13.2	13.2	6.6	.....	.....	6.6	33.0	26.4	.....	.....	6.6	13.2	79.2	66.0	.....	.....	

Lake.....	104,763	1,457	14.0	111.8	15.3	20.0	15.3	3.8	3.8	14.3	160.5	219.7	9	4.7	8.5	51.5	135.3	9	3
Lapeer.....	587	247	12.3	104.9	62.9	8.2	13.8	10.4	4.1	10.4	92.3	65.0	...	2.0	4.1	80.1	102.8	...	3
Leelanau.....	24,229	249	10.3	66.0	10.9	8.4	12.3	...	...	16.5	60.0	16.5	...	8.2	4.1	103.2	57.8	...	3
Mackinac.....	30,082	240	11.3	83.1	16.6	23.2	6.6	...	...	6.6	76.4	39.8	...	6.6	9.9	76.4	83.1	...	2
Manistee.....	10,519	99	9.4	33.0	...	19.0	9.5	...	...	...	76.1	66.6	...	9.5	...	114.2	57.1	...	...
Noble.....	24,495	273	11.1	49.0	8.1	...	...	8.1	4.0	...	57.1	20.4	...	8.1	...	77.5	77.5	...	.08
Oshtemo.....	20,750	237	11.4	53.0	9.6	9.6	4.8	...	...	7.5	106.0	33.7	...	4.8	19.2	110.8	144.6	...	1
Pulaski.....	13,312	181	13.6	75.1	30.0	37.5	7.5	7.5	...	4.8	160.2	90.1	...	15.0	15.0	105.2	105.2	...	1
Sharon.....	10,606	125	11.7	47.1	9.4	9.4	9.4	...	...	...	103.8	94.3	...	...	...	103.8	56.6	...	...
Sheldon.....	14,412	167	11.5	55.5	6.9	13.8	6.9	...	...	6.9	41.6	...	...	...	13.8	88.1	76.3	...	...
St. Joseph.....	91,941	1,093	11.8	101.2	13.0	23.9	11.9	...	2.1	2.1	87.0	67.4	1.0	4.3	1.0	9.7	66.3	104.4	3
Walsh.....	303	303	11.2	51.9	7.4	11.1	3.7	3.7	...	3.7	89.0	18.5	11.1	11.1	11.1	77.9	100.2	...	.07
Wells.....	22,568	194	8.5	106.4	4.4	8.8	4.4	4.4	...	...	57.6	26.6	...	8.8	4.4	39.8	84.2	...	...
White.....	17,020	184	10.4	73.7	11.3	5.6	...	5.6	...	...	119.2	56.7	...	...	...	85.1	45.4	...	.05
Whitely.....	17,033	199	9.9	105.7	11.7	...	35.2	...	...	17.6	76.3	17.6	...	...	5.8	5.8	64.6	...	...
Central Counties.....	1,152,277	15,748	13.7	137.7	27.1	19.0	14.1	4.6	4.9	7.6	113.7	53.6	4.8	5	10.0	7.5	83.1	106.8	3
Bartholomew.....	25,017	333	13.3	104.0	24.0	27.9	16.0	...	7.9	24.0	99.9	20.0	...	...	16.0	3.9	104.0	89.8	...
Boone.....	24,973	299	11.9	116.2	28.0	12.0	8.0	8.0	4.0	8.0	88.9	24.0	...	...	12.0	4.0	44.0	68.0	...
Brown.....	7,975	86	10.7	112.9	12.5	12.5	62.7	...	...	100.3	137.9	12.5	...	...	12.5	...	37.6	37.6	...
Clay.....	33,966	393	11.8	93.7	15.1	12.1	3.0	15.1	18.1	12.1	114.9	81.6	3.0	3.0	15.1	9.0	72.6	75.6	.09
Clinton.....	27,133	341	12.5	98.4	14.7	22.1	18.4	11.0	...	7.3	95.8	36.8	...	...	7.3	117.9	106.9	...	1
Decatur.....	18,907	262	13.8	89.9	67.7	26.4	...	...	...	10.5	84.6	68.7	5.2	...	15.8	...	137.6	...	1
Delaware.....	52,332	640	12.2	112.8	34.4	15.2	7.6	3.8	1.9	3.8	93.6	53.5	...	...	5.7	13.3	70.7	80.2	1.9
Fayette.....	14,601	171	11.6	136.1	13.6	6.8	6.8	...	...	88.4	20.4	...	...	...	...	6.8	129.4	54.4	...
Franklin.....	20,571	238	11.5	92.3	14.5	...	...	4.8	4.8	4.8	58.3	43.7	4.8	9.7	4.8	72.9	72.9	...	2
Franklin.....	15,335	212	13.8	199.7	...	19.5	19.5	...	...	6.5	91.3	39.1	...	...	13.0	65.2	78.2	...	2
Hamilton.....	37,110	331	12.2	103.3	22.1	25.8	29.5	3.6	...	7.3	62.7	47.9	3.6	3.6	22.1	...	70.0	47.9	3.6
Hancock.....	19,030	233	12.1	99.8	15.7	26.2	...	5.2	...	10.5	99.8	52.5	...	...	15.7	...	94.6	57.8	...
Hendricks.....	30,940	233	11.1	124.8	14.3	19.2	4.7	4.7	4.7	14.3	100.8	23.9	9.5	...	9.5	47.9	52.7	...	.05
Henry.....	30,362	386	12.7	85.6	19.7	...	6.5	3.2	3.2	9.5	72.4	3.2	3.2	3.2	13.1	...	48.1	95.5	1
Johnson.....	20,541	254	12.3	121.7	19.4	...	24.3	4.8	4.8	9.7	97.3	63.2	...	...	24.3	4.8	73.0	48.6	4.8
Madison.....	65,914	790	11.9	127.5	21.2	16.6	40.9	7.5	...	4.5	107.7	42.4	3.0	...	7.5	10.6	54.6	92.5	1
Marion.....	283,461	4,587	16.2	133.1	41.6	25.0	12.0	6.7	8.1	7.0	145.4	63.9	9.1	3	7.7	10.9	102.7	135.1	3
Monroe.....	24,191	324	13.4	161.3	37.2	24.8	8.2	...	24.8	4.1	111.6	78.5	12.4	...	4.1	12.4	88.8	99.2	.04
Montgomery.....	21,398	371	12.8	109.6	13.2	9.9	6.6	13.2	3.3	6.6	96.9	23.0	...	...	9.9	6.6	89.6	76.3	1
Morgan.....	21,398	250	11.6	116.9	14.0	14.0	9.3	...	...	18.7	116.9	28.0	4.6	...	2.8	...	51.4	65.4	3
Owen.....	14,053	186	9.6	106.8	35.5	35.5	7.1	...	7.1	...	92.5	14.2	...	...	42.7	7.1	78.2	28.4	...
Parke.....	22,214	274	12.3	207.2	27.0	36.0	13.5	...	...	13.5	49.5	67.5	4.5	...	13.5	13.5	63.0	85.5	9
Pottawatomie.....	20,566	256	11.4	160.7	24.3	9.7	14.5	...	...	...	43.7	24.3	4.8	...	4.8	...	111.9	77.8	...
Randolph.....	376	12.8	133.0	20.6	...	...	...	3.4	...	3.4	98.9	30.6	...	...	...	10.2	78.4	88.6	...
Rush.....	19,433	254	12.0	154.2	30.3	25.7	5.1	...	...	...	77.0	30.8	5.1	...	5.1	...	77.0	87.3	.06

Name	Age	Sex	Marital	Occupation	Education	Religion	Political Party	Social Class	Income	Assets	Liabilities	Net Worth	Life Insurance	Pension	Retirement	Charitable	Total	Notes
Clark	30	M	Married	Teacher	High School	Methodist	Republican	Lower Middle	\$12,000	\$5,000	\$2,000	\$3,000	\$10,000	\$1,000	\$500	\$500	\$12,000	
Cooper	45	M	Married	Engineer	College	Episcopal	Republican	Upper Middle	\$25,000	\$15,000	\$8,000	\$7,000	\$17,000	\$2,000	\$1,000	\$1,000	\$25,000	
Evans	35	F	Married	Homemaker	High School	Baptist	Republican	Lower Middle	\$10,000	\$3,000	\$1,000	\$2,000	\$8,000	\$500	\$200	\$300	\$10,000	
Green	50	M	Married	Businessman	College	Presbyterian	Republican	Upper Middle	\$30,000	\$20,000	\$10,000	\$10,000	\$20,000	\$3,000	\$1,500	\$1,500	\$30,000	
Harmon	40	M	Married	Doctor	College	Methodist	Republican	Upper Middle	\$20,000	\$10,000	\$5,000	\$5,000	\$15,000	\$1,000	\$500	\$500	\$20,000	
Jackson	35	F	Married	Homemaker	High School	Baptist	Republican	Lower Middle	\$10,000	\$3,000	\$1,000	\$2,000	\$8,000	\$500	\$200	\$300	\$10,000	
Jefferson	25	M	Single	Student	College	Methodist	Republican	Lower Middle	\$5,000	\$1,000	\$0	\$1,000	\$4,000	\$0	\$0	\$0	\$5,000	
Johnson	40	M	Married	Businessman	College	Episcopal	Republican	Upper Middle	\$20,000	\$10,000	\$5,000	\$5,000	\$15,000	\$1,000	\$500	\$500	\$20,000	
Knox	30	F	Married	Homemaker	High School	Baptist	Republican	Lower Middle	\$10,000	\$3,000	\$1,000	\$2,000	\$8,000	\$500	\$200	\$300	\$10,000	
Lawrence	55	M	Married	Retired	College	Methodist	Republican	Upper Middle	\$15,000	\$8,000	\$4,000	\$4,000	\$11,000	\$1,000	\$500	\$500	\$15,000	
Martin	20	M	Single	Student	College	Methodist	Republican	Lower Middle	\$5,000	\$1,000	\$0	\$1,000	\$4,000	\$0	\$0	\$0	\$5,000	
North	35	F	Married	Homemaker	High School	Baptist	Republican	Lower Middle	\$10,000	\$3,000	\$1,000	\$2,000	\$8,000	\$500	\$200	\$300	\$10,000	
Roberts	45	M	Married	Businessman	College	Episcopal	Republican	Upper Middle	\$20,000	\$10,000	\$5,000	\$5,000	\$15,000	\$1,000	\$500	\$500	\$20,000	
Scott	30	M	Married	Teacher	High School	Methodist	Republican	Lower Middle	\$12,000	\$5,000	\$2,000	\$3,000	\$10,000	\$1,000	\$500	\$500	\$12,000	
Thompson	50	M	Married	Businessman	College	Presbyterian	Republican	Upper Middle	\$30,000	\$20,000	\$10,000	\$10,000	\$20,000	\$3,000	\$1,500	\$1,500	\$30,000	
White	40	F	Married	Homemaker	High School	Baptist	Republican	Lower Middle	\$10,000	\$3,000	\$1,000	\$2,000	\$8,000	\$500	\$200	\$300	\$10,000	
Wilson	35	M	Married	Businessman	College	Episcopal	Republican	Upper Middle	\$20,000	\$10,000	\$5,000	\$5,000	\$15,000	\$1,000	\$500	\$500	\$20,000	
Young	25	F	Single	Student	College	Methodist	Republican	Lower Middle	\$5,000	\$1,000	\$0	\$1,000	\$4,000	\$0	\$0	\$0	\$5,000	

Ohio.....	4,220	53	12.7	69.3	17.3	60.4	11.5	.....	34.7	28.9	115.5	46.2	.....	5.7	23.1	161.7	.....
Orange.....	17,231	186	10.6	132.7	14.4	38.2	21.5	.....	27.3	16.4	82.6	5.7	.....	5.4	11.5	34.7	23.0
Perry.....	18,821	201	19.2	138.7	35.4	38.2	21.5	.....	27.3	16.4	82.6	5.7	.....	5.4	11.5	34.7	23.0
Pike.....	19,484	260	18.2	188.9	27.5	38.2	20.3	5.0	71.1	25.4	80.2	78.2	.....	5.0	10.1	40.9	40.8
Poey.....	21,799	194	8.9	110.1	27.5	4.5	4.5	9.1	.....	4.5	86.7	41.2	.....	4.5	13.7	22.9	82.6
Ripley.....	19,680	240	12.1	98.5	30.4	40.6	10.1	.....	.....	20.3	78.2	30.4	.....	20.3	104.7	55.9	.....
Scott.....	8,728	110	12.6	137.5	57.3	22.3	19.3	.....	22.9	45.8	53.4	80.7	.....	22.9	137.5	91.6	.....
Spencer.....	20,678	213	10.3	111.3	9.6	18.2	19.3	.....	.....	19.3	43.5	38.7	.....	4.8	4.8	87.7	91.9
Sullivan.....	34,368	382	11.1	78.5	20.3	40.7	11.6	8.7	8.7	20.3	87.3	104.8	2.9	14.5	14.5	58.2	90.2
Switzerland.....	9,914	133	13.4	191.7	30.2	10.0	.....	.....	.....	22.3	121.1	10.0	10.0	20.1	10.0	121.1	90.7
Vanderburgh.....	80,630	1,270	15.7	214.6	18.6	12.4	16.1	3.7	9.9	22.3	127.7	79.3	2.4	1.2	11.1	70.7	107.9
Warren.....	22,133	273	12.3	126.2	40.5	31.5	13.5	.....	13.5	27.0	184.8	88.5	4.5	31.5	4.5	49.5	63.0
Washington.....	17,445	191	10.9	131.9	11.4	11.4	22.9	5.7	.....	11.4	68.8	28.6	5.7	17.2	17.2	45.8	57.3
Urban.....	1,245,315	17,860	14.3	134.1	8.4	24.4	15.4	5.1	6.5	8.8	118.9	74.1	4.1	8	8.9	88.2	124.4
Rural.....	1,550,642	18,009	11.6	115.5	32.3	18.4	12.3	3.2	4.5	11.9	89.0	45.3	1.8	1.0	6.9	70.5	77.5
																	.3

TABLE No. 6.

*Number of Deaths from All Causes, and Rate Per 1,000 Population. Important Ages. Important Causes (Stillbirths Excluded).*

CITIES.	Population.	IMPORTANT AGES.						DEATHS FROM IMPORTANT CAUSES.																				
		Under 1 Year.	1 to 4, Inclusive.	5 to 9, Inclusive.	10 to 14, Inclusive.	15 to 19, Inclusive.	55 Years and Over.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhoea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.	Deaths in Institutions.	Deaths of Non-Residents.			
Cities of the First Class, Population 100,000 and over...	252,994	4,173	16.5	541	212	102	78	125	954	457	105	69	27	16	25	18	355	162	23	2	19	26	293	352	1,128	...	1,128	...
Indianapolis	252,994	4,173	16.5	541	212	102	78	125	954	457	105	69	27	16	25	18	355	162	23	2	19	26	293	352	1,128	238	1,128	238
Cities of the Second Class, Population 45,000 to 100,000...	267,060	3,477	13.0	571	215	87	44	88	812	311	48	47	53	6	11	26	288	176	16	4	7	27	204	352	...	801	...	801
Evansville	72,839	977	13.4	148	68	27	11	26	223	98	12	9	11	3	8	15	85	50	2	...	...	...	8	45	78	237	37	237
Fort Wayne	69,576	831	11.9	123	33	21	13	22	236	51	11	10	16	2	...	7	45	24	2	...	...	3	6	42	64	288	106	288
Terre Haute	64,601	949	14.6	136	64	28	15	26	202	107	16	15	19	1	3	2	99	51	11	...	...	4	6	44	126	183	56	183
South Bend	60,044	720	11.9	164	50	11	5	14	151	60	9	13	7	...	...	2	54	51	1	...	...	5	5	33	66	94	25	94
Cities of the Third Class, Population 20,000 to 45,000...	229,816	3,247	14.1	729	231	86	38	69	716	260	49	48	49	12	10	16	295	267	1	...	...	23	14	177	369	2	484	...
Gary	31,802	339	10.6	141	44	14	5	2	18	15	5	5	3	...	...	1	47	55	1	...	...	...	2	8	53	32	2	32
Muncie	24,923	332	13.3	48	18	5	2	6	96	27	8	4	3	...	...	...	1	19	14	...	...	...	3	18	30	29	6	29
Richmond	23,651	297	12.6	44	15	6	5	11	111	29	5	2	4	...	...	...	...	...	...	...	...	...	2	1	12	26	...	...
Hammond	22,457	381	16.2	99	35	18	7	3	80	24	1	12	3	...	...	...	...	...	...	...	...	...	3	4	12	71	118	56
Anderson	23,166	315	13.6	43	24	9	4	10	83	34	6	7	13	...	...	...	...	...	...	...	...	...	4	2	10	34	...	...

East Chicago.....	20,802	354 17 0	170	59	9	2	7	11	18	5	3	6	1	1	2	47	99	1	1	19	39	5	1		
Lafayette.....	20,649	399 19 3	41	13	7	4	9	128	35	6	7	2	1	2	4	3	30	12	2	28	48	155	50		
New Albany.....	20,639	289 14 0	38	7	3	6	7	41	9	1	9	1	2	6	1	12	11	6	21	21	25	8			
Elkhart.....	20,509	271 13 2	29	8	10	...	4	95	13	1	3	9	1	2	20	6	...	2	31	28	29	7			
Michigan City.....	20,278	270 13 3	77	8	5	3	10	62	24	3	4	2	3	1	1	18	16	...	1	18	20	49	21		
Cities of the Fourth Class, Population 10,000 to 20,000.....	174,438	2,448 14 0	355	154	47	32	51	775	219	44	74	24	6	9	12	223	105	2	23	15	149	160	221	...	
Marion.....	19,965	311 15 5	46	16	11	3	6	84	31	2	4	8	2	1	2	23	11	...	3	3	16	24	24	10	
Louisport.....	18,902	308 15 4	26	12	1	4	7	112	25	4	33	1	3	1	3	18	8	...	3	23	23	47	12	4	
Kokomo.....	18,930	292 15 4	48	25	6	4	8	87	33	7	8	1	1	2	3	20	15	...	3	2	16	20	28	12	
Vincennes.....	16,287	244 14 9	34	17	10	3	4	60	20	9	4	2	6	3	23	9	...	2	3	16	20	28	12	4	
Mishawaka.....	13,782	156 11 3	26	11	2	4	...	46	11	1	5	1	1	1	15	7	...	...	11	8	...	30	5	...	
Peru.....	11,642	158 13 5	21	6	3	1	2	54	7	2	6	2	...	2	16	4	...	2	1	9	15	16	5	...	
Leopold.....	11,548	147 12 7	19	8	2	2	4	56	11	...	1	3	...	1	8	11	...	1	9	8	...	35	12	...	
Elwood.....	11,028	117 10 6	24	10	3	1	4	40	12	6	2	3	1	1	15	4	...	1	2	4	6	...	1	4	
Huntington.....	10,506	134 12 7	15	7	3	1	2	44	8	1	5	...	1	...	12	7	...	2	2	13	8	...	3	...	
Jeffersonville.....	10,412	153 14 7	28	12	1	4	4	42	21	4	1	1	...	1	14	8	...	1	1	7	8	...	...	...	
Shelbyville.....	10,199	134 13 1	19	1	2	2	3	48	15	2	4	...	2	1	15	3	...	1	1	3	5	...	1	1	
Crawfordsville.....	10,187	159 15 6	17	10	2	2	3	65	14	2	2	2	2	2	11	6	...	2	1	13	10	...	14	9	
New Castle.....	10,050	135 13 4	32	19	1	1	4	37	11	5	...	...	1	1	13	13	...	2	...	6	10	...	2	1	
Cities of the Fifth Class, Population under 10,000.....	322,007	4,515 14 0	652	289	102	58	100	1,527	434	92	67	40	24	27	38	315	214	10	1	40	30	306	313	108	...
Brasil.....	9,805	154 15 7	36	8	3	2	2	47	6	2	1	...	3	2	1	16	10	...	1	...	8	...	3	3	
Bloomington.....	9,549	157 16 4	24	15	...	3	4	45	16	2	3	...	3	1	9	12	...	1	1	13	14	...	11	1	
Bedford.....	9,496	170 17 9	31	18	9	4	6	37	19	12	4	2	10	4	8	10	...	...	6	11	...	...	...	...	
Frankfort.....	9,083	145 15 9	11	10	1	1	1	48	9	3	2	1	1	1	11	3	...	2	1	15	12	...	7	3	
Columbus.....	9,017	133 14 7	20	4	2	...	3	39	12	3	1	...	1	1	3	10	...	2	...	9	10	...	...	...	
Goshen.....	8,724	140 16 0	16	2	5	...	2	61	5	...	2	3	...	...	4	5	...	1	3	1	18	15	...	8	1
Wabash.....	8,705	108 12 4	14	2	3	1	1	35	5	1	1	1	1	...	8	3	...	2	2	7	7	...	3	1	
Connersville.....	8,008	94 11 7	6	4	2	2	2	35	12	1	1	1	...	1	5	2	...	1	1	7	6	...	...	...	
Washington.....	7,854	102 12 9	21	5	4	3	...	30	18	1	4	...	1	6	6	1	...	1	4	1	4	...	1	...	
Whiting.....	7,367	80 10 8	33	19	1	...	1	6	5	2	1	1	1	2	1	9	16	...	1	...	1	3	...	...	
Clinton.....	7,222	110 15 2	36	10	1	...	3	22	14	...	...	1	...	...	13	14	...	1	1	3	11	...	...	...	
Valparaiso.....	7,197	82 11 3	4	4	2	...	6	25	2	1	2	1	...	...	7	...	...	...	...	11	11	...	7	1	
Machon.....	6,984	120 17 3	9	2	1	1	6	51	13	2	3	...	2	1	6	3	...	2	1	12	12	...	13	3	
Linton.....	6,765	76 11 2	17	13	3	...	5	14	14	...	2	2	1	5	2	8	...	1	...	2	4	...	4	2	
Princeton.....	6,568	100 15 2	14	11	2	3	3	27	15	4	...	2	2	1	2	6	...	1	...	7	...	...	1	...	

TABLE No. 6—Continued.

CITIES.	Population.	Total Deaths Reported— All Causes, Year 1914.	Death Rate Per 1,000	IMPORTANT AGES.						DEATHS FROM IMPORTANT CAUSES.													Deaths of Non-Residents.				
				Under 1 Year.						Pulmonary Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhoea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Polyomyelitis.	Influenza.	Purpural Septicemia.	Cancer.		External Causes.	Smallpox.	Deaths in Institutions.	
				1 to 4, Inclusive.	5 to 9, Inclusive.	10 to 14, Inclusive.	15 to 19, Inclusive.	20 to 24, Inclusive.	25 Years and Over.																		
Hartford City.....	6,412	85	13.2	21	5	5	2	1	19	7	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Seymour.....	6,305	118	18.7	21	13	8	2	1	34	12	6	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Lebanon.....	5,774	80	13.8	6	4	2	1	1	34	12	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mt. Vernon.....	5,692	65	11.4	7	5	2	1	1	62	14	5	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Greensburg.....	5,534	116	20.9	10	8	5	1	1	21	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kendallville.....	5,467	60	10.9	10	2	1	1	1	28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Portland.....	5,229	74	14.1	10	4	2	1	1	26	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Noblesville.....	5,157	72	13.9	7	2	1	1	1	27	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bluffton.....	5,137	61	11.8	6	1	1	1	1	22	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Alexandria.....	5,096	54	10.6	9	2	2	1	1	15	6	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rushville.....	5,039	84	16.6	4	9	3	2	1	31	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Martinsville.....	4,676	79	16.8	14	3	1	1	3	29	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Franklin.....	4,649	50	10.5	7	2	2	1	1	13	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aurora.....	4,638	79	16.6	9	6	2	1	1	34	12	6	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Decatur.....	4,567	62	13.5	4	6	5	1	1	18	8	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Waraw.....	4,562	59	12.9	7	2	1	1	1	27	11	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Greenfield.....	4,448	67	15.0	8	2	1	1	2	30	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Winchester.....	4,434	60	13.5	11	5	2	1	1	20	4	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sullivan.....	4,412	64	14.5	4	4	2	1	1	27	5	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Garrett.....	4,218	59	13.9	11	2	1	2	2	13	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boonville.....	4,216	63	14.9	11	5	2	3	2	17	7	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tippecanoe.....	4,168	50	12.0	8	3	1	1	1	19	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Auburn.....	4,075	46	11.2	6	1	1	1	1	21	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Michell.....	3,936	48	12.1	7	2	1	1	1	17	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lawrenceburg.....	3,930	44	11.2	8	2	1	1	1	15	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Plymouth.....	3,892	40 10.2	5	2	1	2	1	1	2	1	1	1	1	7	1	1
Greencastle.....	3,826	39 10.1	4	1	1	2	1	1	1	1	1	1	1	6	1	1
Columbus City.....	3,589	38 10.5	5	1	1	1	1	1	1	1	1	1	1	4	1	1
Tell City.....	3,573	39 10.9	4	4	2	1	1	1	1	1	1	1	1	2	1	1
Attica.....	3,434	49 14.2	6	1	1	2	1	1	2	1	1	1	1	1	1	1
Rochester.....	3,364	69 20.5	5	1	3	1	1	1	1	1	1	1	1	9	7	6
Union City.....	3,353	55 16.4	6	1	1	1	1	1	1	1	1	1	1	4	4	2
Jasonville.....	3,300	33 10.0	14	9	1	1	1	1	1	1	1	1	1	4	4	1
Gas City.....	3,224	30 9.3	6	2	4	2	1	3	1	1	1	1	1	2	6	1
Dunkirk.....	3,031	44 14.5	6	2	1	2	1	1	1	1	1	1	1	1	1	1
North Vernon.....	2,942	36 12.2	3	1	2	1	1	1	1	1	1	1	1	2	5	1
Bicknell.....	2,799	61 21.7	16	17	3	2	1	1	1	1	1	1	1	1	9	1
Montpelier.....	2,786	35 12.5	4	3	1	1	1	1	1	1	1	1	1	1	1	1
Angola.....	2,748	34 12.3	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Rockport.....	2,736	35 12.7	4	4	1	1	1	1	1	1	1	1	1	1	1	1
Crown Point.....	2,583	48 18.5	5	2	1	1	1	1	1	1	1	1	1	1	3	1
Huntingburg.....	2,494	27 10.9	5	2	1	1	1	1	1	1	1	1	1	1	1	1
Rensselaer.....	2,432	57 15.2	4	2	1	1	1	1	1	1	1	1	1	1	1	1
Logansport.....	2,385	29 12.1	6	1	1	1	1	1	1	1	1	1	1	1	1	1
Batesville.....	2,379	24 10.0	2	3	1	1	1	1	1	1	1	1	1	1	1	1
Monticello.....	2,186	33 15.0	3	1	1	1	1	1	1	1	1	1	1	1	1	1
Ligonier.....	2,175	26 11.9	3	1	1	1	1	1	1	1	1	1	1	1	1	1
Delphi.....	2,157	26 12.0	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Cannelton.....	2,130	35 16.4	4	6	2	1	1	1	1	1	1	1	1	1	1	1
Covington.....	2,069	30 14.5	5	1	1	1	1	1	1	1	1	1	1	1	1	1
Butler.....	1,818	23 12.6	3	1	1	1	1	1	1	1	1	1	1	1	1	1
Veedersburg.....	1,790	17 9.4	3	1	1	1	1	1	1	1	1	1	1	1	1	1
Rising Sun.....	1,513	27 17.8	3	1	1	1	1	1	1	1	1	1	1	1	1	1
Vevay.....	1,256	26 20.7	1	1	1	1	1	1	1	1	1	1	1	1	1	1



TABLE No. 7.

*Death Rates by Cities, All Causes, Per 1,000 Population; Important Causes Per 100,000 (Stillbirths Excluded).*

STATE AND COUNTIES.	Population.	Total Deaths Reported —All Causes, Year 1914.	Death Rate Per 1,000 Popu- lation.	DEATH RATE PER 100,000 POPULATION FROM IMPORTANT CAUSES.																	Deaths of Non-residents.
				Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Group.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhoea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Polyomyelitis.	Influenza.	Puerperal Septicæmia.	Cancer.	External Causes.	Smallpox.		
Cities of the First Class. Population 100,000 and over	252,994	4,173	16.5	180.7	41.5	27.2	10.6	6.3	9.8	6.6	144.4	64.0	9.0	.7	7.5	10.2	104.0	139.2	.....	.....	
Indianapolis.....	252,994	4,173	16.5	180.7	41.5	27.2	10.6	6.3	9.8	6.6	144.4	64.0	9.0	.7	7.5	10.2	104.0	139.2	.....	.....	
Cities of the Second Class. Population 45,000 to 100,000.	267,060	3,477	13.0	116.5	17.9	17.6	19.8	2.2	4.1	9.7	106.0	65.9	5.9	1.4	2.6	10.1	76.4	131.8	.....	.....	
Evansville.....	72,839	977	13.4	127.7	16.4	12.3	15.1	4.1	10.9	20.5	116.7	68.6	2.7	.....	.....	10.9	61.7	107.1	.....	.....	
Ft. Wayne.....	69,576	831	11.9	73.5	15.8	4.3	23.0	2.8	.....	10.3	64.6	34.5	2.8	.....	4.3	8.6	103.5	120.8	.....	.....	
Terre Haute.....	64,601	949	14.6	165.7	26.3	23.2	29.4	1.5	4.6	3.0	153.5	78.9	17.0	.....	6.1	6.1	83.6	158.9	.....	.....	
South Bend.....	60,044	720	11.9	99.9	14.9	21.6	11.6	.....	.....	3.3	89.9	84.9	1.6	6.6	.....	14.9	54.9	113.3	.....	.....	
Cities of the Third Class. Population 20,000 to 45,000.	229,816	3,247	14.1	113.1	21.3	20.8	21.3	5.2	4.3	6.9	128.3	116.2	.4	.....	10.0	6.0	77.0	160.5	.....	8	
Gary.....	31,902	339	10.6	47.1	15.7	15.7	9.4	.....	3.1	15.7	147.8	173.0	3.1	.....	.....	6.2	25.1	166.7	.....	.....	
Muncie.....	24,923	332	13.3	108.4	32.1	16.0	12.1	.....	.....	4.0	76.2	56.1	.....	.....	12.1	12.1	72.2	120.5	.....	.....	
Richmond.....	23,551	297	12.6	123.2	21.2	8.4	16.9	12.7	.....	.....	110.4	25.4	.....	.....	8.4	4.2	50.9	110.4	.....	.....	
Hammond.....	23,487	331	16.2	102.2	4.2	51.1	12.7	4.2	.....	85.1	183.2	161.9	.....	.....	12.7	17.0	51.1	302.4	.....	4.2	
Anderson.....	23,166	315	13.6	146.9	25.9	30.2	56.1	8.6	.....	.....	142.5	43.1	.....	.....	17.2	8.6	43.1	142.5	.....	2.3	
East Chicago.....	20,802	354	17.0	86.5	24.0	14.4	28.8	4.8	4.8	9.6	226.0	475.9	.....	.....	4.8	4.8	91.2	187.5	.....	.....	
Lafayette.....	20,669	309	19.3	169.5	29.0	33.8	9.6	4.8	.....	14.5	145.2	59.4	.....	.....	9.6	.....	125.6	222.4	.....	.....	
New Albany.....	20,629	289	14.0	198.9	43.6	48.9	19.4	4.8	9.6	.....	53.2	53.3	.....	.....	29.1	.....	101.9	101.9	.....	4.8	
Elkhart.....	20,509	271	13.2	63.4	4.8	14.6	43.8	4.8	4.8	9.7	97.5	29.2	.....	.....	9.7	.....	151.2	126.6	.....	.....	
Michigan City.....	20,278	270	13.3	118.4	14.7	19.7	9.8	14.7	4.9	4.9	88.8	78.9	.....	.....	.....	4.9	88.8	98.6	.....	.....	

Cities of the Fourth Class.  
Population 10,000 to 20,000.

Cities of the Fourth Class. Population 10,000 to 20,000.																		
174,438	2,448	14.0	125.6	25.2	42.4	13.7	3.4	5.1	6.8	127.9	60.2	1.1	13.1	8.6	85.4	91.7		
19,965	311	15.5	155.3	10.0	20.0	40.0	10.0	5.0	10.0	115.2	55.1		15.0	15.0	80.0	120.3	5	
19,902	308	15.4	125.6	20.1	165.8	5.0					40.2				105.7	17.6	5	
18,980	292	15.4	174.3	36.9	32.2	5.2				215.5	73.9		15.5	10.5	108.7	115.6	5	
16,287	244	14.9	122.9	35.2	24.5	12.2		36.8	18.4	141.3	55.2		12.2	18.4	98.2	122.9	7	
13,782	156	11.3	79.8	7.2	36.2	7.2		7.2		108.9	51.8				79.8	53.0	3	
11,642	158	13.5	60.1	17.1	42.9	17.1			17.1	128.9	34.3		17.1	8.5	77.3	128.9	4	
11,548	147	12.7	95.3		8.6	26.0			8.6	69.3	95.3		8.6		77.9	69.3	4	
11,028	117	10.6	108.9	46.3	18.1	27.2	9.0			136.1	36.3	9.0	9.0	18.1	36.3	54.4	3	
10,506	134	12.7	76.1	9.5	47.6		9.5			114.3	66.6		19.0	19.0	123.9	76.1		
10,412	153	14.7	201.7	38.4	9.6	9.6			9.6	134.5	76.8		9.6	9.6	67.2	76.8		
10,199	134	13.1	147.2	19.6	39.2					147.2	29.4	9.8		9.8	29.4	49.0	9	
10,187	159	15.6	137.6	19.6	19.6	19.6	19.6			108.1	58.9		19.6	9.8	127.7	98.2	9	
10,060	135	13.4	109.5	49.7				9.9		129.4	129.4		19.9		59.7	99.5	9	
Cities of the Fifth Class. Population under 10,000.																		
322,007	4,515	14.0	134.8	28.5	20.8	12.4	7.4	8.3	11.5	97.8	66.4	3.1	3	12.4	9.3	95.0	97.1	
9,805	154	15.7	61.2	20.4	10.2		30.6	20.4	10.2	163.2	102.0		10.2		81.6	81.6	3	
9,594	157	16.4	167.6	20.9	31.4			31.4	10.4	94.2	125.7		10.4	10.4	136.1	146.6	1	
9,496	170	17.9	200.2	126.4	42.1	21.0	105.3	42.1		84.2	105.3				83.2	115.9	1	
9,093	145	15.9	98.9	32.9	22.0	11.0	11.0		11.0	121.0	32.9			11.0	165.0	132.0	3	
9,017	133	14.7	133.0	33.2	11.0	11.0		11.0	33.2	110.9			22.1		99.8	110.9		
8,724	140	16.0	57.3		22.9	34.3			45.8	57.3		11.4	34.3	11.4	206.4	172.0	1	
8,705	168	12.4	57.4	11.4	11.4	11.4	11.4			91.9	34.4	11.4		22.9	80.4	80.4	1	
8,008	94	11.7	149.9	12.4	12.4	12.4				62.4	24.9			12.4	87.4	74.9		
7,854	102	12.9	229.2	12.7		50.9			12.7	76.4	76.4	12.7			50.9	12.7		
7,367	60	10.8	67.8	27.1	13.5	13.5	13.5	27.1	13.5	122.3	217.2		13.5		13.5	40.7		
7,222	110	15.2	193.8			13.9				180.0	108.8	13.9		13.9	41.5	152.3		
7,197	82	11.3	27.7	13.8	37.7	13.8				97.2					152.9	152.9	1	
6,924	120	17.3	187.5	28.8	43.2					86.5	43.2		28.8	14.4	173.1	173.1	4	
6,755	76	11.2	207.3		29.6	29.6	14.8	74.0	29.6	118.5	118.5				29.6	59.2	2	
6,568	100	15.2	228.4	60.9		30.4	30.4	30.4	30.4	91.3	45.6		15.2		106.6	106.6		
6,412	85	13.2	109.2			15.6	15.6		15.6	46.7	93.5	15.6	46.7	15.6	124.8	109.2		
6,305	118	18.7	190.4	126.9	79.3	15.8	15.8	31.7	47.5	283.9	79.3	15.8			95.1	143.8	6	
5,774	80	13.8	138.6	17.3	17.3	17.3				56.9	17.3				69.2	69.2		
5,692	65	11.4	106.5	17.5	64.2	17.5	36.1			72.3			17.5	52.7	35.1	158.1		
5,534	116	20.9	253.0	90.3							90.3		18.0		126.5	144.6	3	

Cities of the Fifth Class.  
Population under 10,000.

Cities of the Fifth Census.																	
Population under 10,000.																	
322,007	4,515	14.0	134.8	28.5	20.8	12.4	7.4	8.3	11.5	97.8	66.4	3.1	3	12.4	9.3	95.0	97.1
9,805	154	15.7	61.2	20.4	10.2												
9,594	157	16.4	167.6	20.9	31.4	30.6		20.4	10.2	163.2	102.0			10.2		81.6	81.6
9,496	170	17.9	200.2	126.4	42.1			31.4	10.4	94.2	125.7			10.4	10.4	136.1	146.6
9,093	145	15.9	98.9	32.9	22.0	21.0	105.3	42.1		84.2	105.3					83.2	115.9
9,017	133	14.7	133.0	33.2	11.0	11.0	11.0		11.0	121.0	32.9				11.0	165.0	132.0
								11.0	33.2	110.9				22.1		99.8	110.9
8,724	140	16.0	57.3		22.9	34.3			45.8	57.3		11.4		34.3	11.4	206.4	172.0
8,705	168	12.4	57.4	11.4	11.4	11.4				91.9	34.4	11.4			22.9	80.4	80.4
8,008	94	11.7	149.9	12.4	12.4	12.4				62.4	24.9				12.4	87.4	74.9
7,854	102	12.9	229.2	12.7		50.9			12.7	76.4	76.4	12.7			12.4	50.9	12.7
7,367	60	10.8	67.8	27.1	13.5	13.5	13.5	27.1	13.5	122.3	217.2			13.5		13.5	40.7
7,222	110	15.2	193.8		13.9					180.0	193.8	13.9			13.9	41.5	152.3
7,197	82	11.3	27.7	13.8	37.7	13.8				97.2						152.9	152.9
6,924	120	17.3	187.5	28.8	43.2					86.5	43.2			28.8	14.4	173.1	173.1
6,755	76	11.2	207.3		29.6	29.6	14.8	74.0	29.6	118.5	118.5	29.6			29.6	59.2	
6,568	100	15.2	228.4	60.9		30.4	30.4	30.4	30.4	91.3	45.6			15.2		106.6	106.6
6,412	85	13.2	109.2		15.6	15.6	15.6		15.6	46.7	93.5	15.6		46.7	15.6	124.8	109.2
6,305	118	18.7	190.4	126.9	79.3	15.8	15.8	31.7	47.5	283.9	79.3	15.8			95.1	143.8	
5,774	80	13.8	138.6	17.3	17.3				17.3	56.9	17.3				69.2	69.2	
5,692	65	11.4	106.5	17.5		17.5	36.1			72.3	35.1	17.5		52.7	35.1	158.1	
5,534	116	20.9	253.0	90.3	54.2						90.3			18.0		126.5	144.6
																	3

TABLE No. 7—Continued.

STATE AND COUNTIES	DEATH RATE PER 100,000 POPULATION FROM IMPORTANT CAUSES.																			
	Population.	Total Deaths Reported —All Causes, Year 1914.	Death Rate, Per 1,000 Popu- lation.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhoea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Polyomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.	Deaths of Non-residents.
Kendallville	5,467	60	10.9	18.2	18.2	19.1	19.3	19.1	38.2	73.1	73.1	73.1	73.1	18.2	18.2	91.4	91.4	36.5		
Portland	5,229	74	14.1	172.1	19.1	19.1	19.3	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	114.8	114.8	76.5		
Noblesville	5,157	72	13.9	177.5	38.7	19.4	19.3	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	58.1	58.1	77.5		3
Bluffton	5,137	61	11.8	176.2	19.4	19.4	39.2	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	38.9	38.9	136.3		
Alexandria	5,096	54	10.6	117.8	19.6	19.6	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	98.1	98.1	19.6		
Rushville	5,039	84	16.6	178.6	59.5	19.8	19.8	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	99.2	99.2	158.9		1
Martinsville	4,676	79	16.8	149.7	21.3	21.3	19.8	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	106.9	106.9	42.7		1.7
Franklin	4,649	50	10.5	64.5	21.5	21.5	21.5	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	86.0	86.0	43.0		
Aurora	4,638	79	16.6	151.0	43.1	43.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	129.4	129.4	107.8		
Decatur	4,567	62	13.5	175.2	21.9	175.2	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	52.1	52.1	131.4		
Warsaw	4,502	59	12.9	241.2	43.8	43.8	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	87.6	87.6	43.8		4
Greenfield	4,448	67	15.0	89.9	22.4	22.4	45.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	179.9	179.9	89.9		2
Winchester	4,434	60	13.5	88.1	67.6	67.6	45.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	157.9	157.9	135.4		2
Sullivan	4,412	64	14.5	113.4	68.0	68.0	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	22.6	22.6	136.1		2
Garrett	4,218	59	13.9	47.4	71.1	47.4	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	71.1	71.1	142.3		1.8
Bloomville	4,216	63	14.9	166.1	47.4	47.4	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	94.8	94.8	142.4		
Tipton	4,164	50	12.0	71.9	24.0	47.9	24.0	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	24.0	24.0	95.9		
Auburn	4,075	46	11.2	171.8	24.5	24.5	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	24.5	24.5	24.5		
Mitchell	3,936	48	12.1	228.6	25.4	25.4	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	50.8	50.8	76.2		
Lawrenceburg	3,930	44	11.2	101.8	101.8	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	25.4	25.4	50.8		
Bloomville	3,892	40	10.2	25.6	51.3	25.6	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	179.8	179.8	25.6		
Greencastle	3,826	39	10.1	183.1	26.1	26.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	157.0	157.0	78.4		
Columbia City	3,589	38	10.5	55.7	55.7	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	111.5	111.5	55.7		
Tell City	3,573	39	10.9	168.0	27.0	27.0	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	27.0	27.0	112.0		
Attica	3,434	40	11.7	203.9	58.2	58.2	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	29.1	29.1	56.2		2
Rochester	3,364	60	20.5	237.8	29.7	29.7	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	267.7	267.7	208.0		5



TABLE No. 8.

*Annual Death Rates per 1,000 for Ten Years 1905 to 1914, Inclusive, with Average of Cities 5,000 (Estimated) Population and Over, Compared with Rural and State Rates.*

CITIES.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914 State Population 2,796,957.	Rate for 1914.	Aver- age.
Indianapolis....	16.0	16.4	16.4	14.3	14.8	16.4	15.1	15.3	16.0	252,994	16.5	15.7
Evansville....	14.4	15.1	13.8	14.4	15.0	13.4	15.5	13.4	13.9	72,839	13.4	14.2
Fort Wayne....	13.9	16.3	15.7	14.6	13.7	13.0	11.7	12.3	13.3	69,576	11.9	13.6
Terre Haute....	21.0	22.5	17.6	17.2	18.0	16.2	15.7	14.5	16.1	64,601	14.6	17.3
South Bend....	17.1	16.8	16.1	16.3	17.3	14.1	14.1	12.6	13.6	60,044	11.9	14.9
Gary....						16.2	17.8	22.3	17.7	31,802	10.6	16.9
Muncie....	16.0	14.8	15.7	15.9	15.1	15.3	13.0	12.7	15.4	24,923	13.3	14.7
Richmond....	14.0	16.1	15.2	15.6	16.8	13.9	12.1	13.3	11.6	23,551	12.6	14.1
Hammond....	15.2	17.9	17.2	14.6	13.8	14.6	13.4	15.5	17.4	23,487	16.2	15.5
Anderson....	12.1	13.3	13.1	11.2	14.5	14.6	13.5	13.0	9.9	23,166	13.6	12.8
East Chicago....	14.5	18.5	32.2	26.5	29.0	15.3	15.7	16.7	24.3	20,802	17.0	20.9
Lafayette....	21.6	18.6	16.0	17.7	19.4	16.6	16.9	19.4	18.1	20,669	19.3	13.3
New Albany....	18.1	16.1	17.6	15.8	14.2	18.2	15.4	14.7	15.5	20,629	14.0	15.9
Elkhart....	13.6	14.0	14.2	13.4	14.2	13.9	10.8	11.3	12.8	20,509	13.2	13.1
Michigan City....	14.1	14.3	15.4	12.1	11.5	14.7	13.2	13.0	14.1	20,278	13.3	13.5
Marion....	14.0	13.6	11.5	9.6	11.0	12.5	13.2	14.1	16.1	19,965	15.5	13.1
Logansport....	17.1	16.0	14.8	18.4	19.6	15.9	13.3	16.0	16.0	19,902	15.4	15.9
Kokomo....	18.7	20.0	18.1	19.7	17.3	15.1	12.2	14.3	15.5	18,930	15.4	16.6
Vincennes....	20.7	20.0	18.5	18.6	15.4	19.2	17.1	15.9	15.9	16,287	14.9	17.6
Mishawaka....	24.3	21.4	21.9	30.0	13.5	11.6	13.2	10.3	11.3	13,782	11.3	16.8
Peru....	11.2	13.8	13.5	12.0	15.4	13.3	13.6	12.6	13.1	11,642	13.5	13.2
Laporte....	17.5	20.7	19.8	15.0	15.9	17.8	16.2	20.8	16.7	11,548	12.7	17.3
Elwood....	11.6	8.4	8.6	9.4	10.1	15.6	9.6	11.1	15.0	11,628	10.6	11.0
Huntington....	12.7	13.4	12.2	14.0	14.6	18.6	12.3	13.6	13.7	10,506	12.7	13.7
Jeffersonville....	17.3	19.7	20.2	13.1	15.0	19.2	17.6	15.3	13.2	10,412	14.7	16.5
Shelbyville....	16.5	16.4	14.0	11.7	14.3	13.5	14.9	16.4	13.5	10,199	13.1	14.4
Crawfordsville....	20.0	20.3	22.1	19.7	22.4	15.0	13.2	14.5	14.4	10,187	15.6	17.7
New Castle....						14.9	13.6	11.4	11.0	10,050	13.4	12.8
Brasil....	12.5	12.8	16.9	13.3	13.0	11.6	15.8	14.4	12.4	9,805	15.7	13.8
Bloomington....	18.9	19.7	14.7	14.9	17.2	18.6	15.8	15.9	14.5	9,549	16.4	16.6
Bedford....	18.1	18.0	19.2	16.8	14.8	15.8	12.5	13.8	10.8	9,496	17.9	15.7
Frankfort....	20.0	18.7	17.6	17.2	14.8	10.4	12.1	13.6	13.8	9,093	15.9	15.4
Columbus....	14.8	17.1	15.1	17.7	14.8	17.2	13.7	14.0	13.0	9,017	14.7	15.2
Goheen....	14.0	18.1	16.3	15.3	13.0	13.2	13.2	12.4	11.7	8,724	16.0	14.3
Wabash....	12.7	13.0	12.0	14.6	13.6	12.8	13.3	12.4	14.6	8,705	12.4	13.1
Connersville....	14.8	15.3	15.3	18.6	16.6	13.3	13.5	14.3	14.1	8,008	11.7	14.7
Washington....	14.2	16.5	11.5	13.2	11.0	12.8	14.1	13.2	19.1	7,854	12.9	13.8
Whiting....	10.3	14.1	14.7	13.5	14.0	13.3	12.6	13.7	14.0	7,367	10.8	13.1
Clinton....						13.8	13.6	20.1	19.0	7,222	15.2	16.3
Valparaiso....	11.5	12.4	11.2	13.2	12.3	12.7	11.1	9.2	12.6	7,197	11.3	11.7
Madison....	15.0	18.4	19.8	19.7	19.0	20.9	17.5	16.4	20.9	6,934	17.3	18.4
Linton....	11.8	11.7	10.4	10.6	11.2	14.3	12.5	11.1	8.6	6,755	11.2	11.3
Princeton....	17.2	13.9	14.5	19.2	18.9	16.1	15.0	14.6	18.2	6,568	15.2	16.3
Hartford City....	12.0	8.8	11.9	9.8	11.2	15.2	16.4	10.8	9.6	6,412	13.2	11.8
Seymour....	15.8	15.6	16.6	21.6	20.0	11.7	14.4	17.9	13.4	6,305	18.7	16.5
Lebanon....						16.9	18.8	15.4	15.1	5,774	13.8	16.0
Mt. Vernon....	18.4	17.9	18.8	15.1	11.5	15.2	16.3	12.8	13.6	5,692	11.4	15.1
Greensburg....	16.2	21.2	14.7	17.5	20.0	14.7	20.8	22.1	16.5	5,334	20.9	18.4
Kendallville....								11.6	9.2	5,467	10.9	
Portland....						16.3	15.0	13.9	14.2	5,229	14.1	14.7
Noblesville....				10.9	11.3	12.6	15.1	13.9	12.8	5,157	13.9	12.9
Bluffton....								16.6	14.3	5,137	11.8	
Alexandria....	4.4	6.9	7.9	9.9	12.1	11.1	14.1	11.9	10.7	5,096	10.6	9.9
Rushville....									13.0	5,039	16.6	
Urban....	15.8	16.4	15.6	13.4	15.1	15.1	14.3	14.5	15.0	1,246,315	14.3	14.9
Rural....	13.9	13.3	11.6	11.6	11.1	12.3	12.0	11.9	11.8	1,550,642	11.6	12.1
STATE....	13.7	13.5	13.4	12.5	13.2	13.5	13.0	13.1	13.2	2,796,957	12.8	13.1

TABLE No. 9.

*Showing Deaths by Occupations and Ages, for the Year Ending December 31, 1914.*

Occupations.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Actors and actresses.	Males. Females.	2			1				2				
Aeronauts and aviators.	Males. Females.					1							
Architects.	Males. Females.							1				3	1
Artists and authors.	Males. Females.		1			1	1				1		
Athletes.	Males. Females.									2	3		
Bakers and confectioners.	Males. Females.	3 1	4	1	6	5	4	1	2	3	2	2	6
Bankers, brokers and officials of companies.	Males. Females.	5	5	6	5	3	2	3		3	2	9	3
Barbers.	Males. Females.	11	6	13	8	6	9	12	6	9	5	12	6
Bartenders and saloonkeepers.	Males. Females.	9	12	10	9	9	6	7	5	2	5	8	12
Basket makers and broom makers.	Males. Females.	1		1	1	1		1	4	1		1	
Blacksmiths and horseshoers.	Males. Females.	10	16	12	17	7	11	14	9	11	11	15	10
Bookbinders.	Males. Females.		1 1			1				1			

TABLE No. 9—Continued.

OCCUPATIONS.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Bookkeepers, clerks and copyists.....	Males..... Females.....	14 3	15 3	18 5	19 4	18 1	21 3	11 3	9 6	14 6	11 2	12 2	12 1
Brewers, distillers, etc.....	Males..... Females.....	1 .....	2 .....	1 .....	4 .....	2 .....	2 .....	2 .....	1 .....	5 .....	.....	.....	1 .....
Brickmakers.....	Males..... Females.....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	1 .....	.....
Builders and contractors.....	Males..... Females.....	12 .....	9 .....	7 .....	5 .....	8 .....	8 .....	8 .....	9 .....	15 .....	10 .....	8 .....	3 .....
Butchers.....	Males..... Females.....	8 .....	5 .....	6 .....	9 .....	1 .....	11 .....	6 .....	7 .....	4 .....	11 .....	4 .....	6 .....
Cabinet makers.....	Males..... Females.....	6 .....	4 .....	2 .....	4 .....	4 .....	..... .....	3 .....	5 .....	4 .....	3 .....	7 .....	7 .....
Carpenters.....	Males..... Females.....	53 .....	36 .....	52 .....	46 .....	51 .....	31 .....	39 .....	28 .....	38 .....	30 .....	31 .....	28 .....
Carrriage and wagon makers.....	Males..... Females.....	5 .....	3 .....	2 .....	2 .....	..... .....	2 .....	2 .....	2 .....	2 .....	5 .....	5 .....	5 .....
Cashiers.....	Males..... Females.....	..... .....	1 .....	..... .....	1 .....	..... .....	..... .....	..... .....	1 .....	..... .....	1 .....	..... .....	.....
Chauffeurs.....	Males..... Females.....	..... .....	..... .....	..... .....	2 .....	1 .....	1 .....	1 .....	1 .....	..... .....	3 .....	..... .....	1 .....
Chemists and druggists.....	Males..... Females.....	5 .....	3 .....	6 .....	3 .....	4 .....	7 .....	3 .....	6 .....	3 .....	4 .....	5 .....	4 .....
Chiroprodists.....	Males..... Females.....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	.....
Cigar makers.....	Males..... Females.....	1 .....	2 .....	1 .....	2 .....	4 .....	2 .....	3 .....	1 .....	1 .....	..... .....	3 .....	3 .....
Cleaners and dyers.....	Males..... Females.....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	1 .....	..... .....	..... .....	1 .....	.....

Clergymen.....	Males.....	9	14	7	7	13	10	12	4	6	1	5
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
Collectors, agents and auctioneers.....	Males.....	6	11	12	8	7	3	1	8	4	9	9
	Females.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	1
Commercial travelers.....	Males.....	3	7	4	6	6	3	4	7	8	6	8
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Compositors, printers and pressmen.....	Males.....	6	5	12	11	5	5	6	4	4	1	3
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Cooks and caterers.....	Males.....	1	5	4	2	2	1	2	2	1	2	4
	Females.....	3	1	1	1	1	1	2	2	2	.....	1
Coopers.....	Males.....	2	1	2	1	.....	4	3	5	4	1	3
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dairymen and creamerymen.....	Males.....	1	.....	1	.....	.....	3	.....	.....	.....	1	1
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dentists.....	Males.....	2	1	2	4	2	.....	1	1	.....	2	1
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....
Draftsmen.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Electricians and linemen.....	Males.....	3	2	7	5	10	7	8	1	3	4	5
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Electric railway employees.....	Males.....	1	4	1	5	3	4	3	2	3	2	2
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elevator operators.....	Males.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Engineers and firemen (railway).....	Males.....	11	5	7	1	6	6	8	1	2	5	11
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Engineers and firemen (stationary).....	Males.....	13	14	6	5	9	5	7	5	10	7	10
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....
Engravers.....	Males.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Factory employees.....	Males.....	4	9	2	7	4	4	7	5	11	4	4
	Females.....	1	1	1	.....	3	2	1	1	2	3	1



TABLE No. 9—Continued.

Occupations.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Farmers and farm laborers.....	Males..... Females.....	462	441	540	492	412	368	345	370	332	340	384	387
Firemen (city).....	Males..... Females.....	2	1	1	1	2	3	3	1	1	.....	1	2
Furriers.....	Males..... Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gardeners, florists and nurserymen.....	Males..... Females.....	5	1	5	5	7	4	.....	9	3	1	.....	3
Glassworkers.....	Males..... Females.....	8	3	4	9	3	2	1	6	2	7	6	5
Gunsmith and locksmith.....	Males..... Females.....	2	.....	.....	.....	1	1	.....	.....	.....	1	.....	.....
Hairdressers, manicurists and masseurs.....	Males..... Females.....	.....	1	1	1	.....	.....	.....	.....	1	.....	2	.....
Harness makers and saddlers.....	Males..... Females.....	3	3	2	3	4	2	3	.....	2	3	2	4
Hotel and boarding house keepers.....	Males..... Females.....	5	2	3	7	6	4	4	1	2	2	3	5
Housework (general).....	Males..... Females.....	1,003	991	1,242	938	828	815	834	800	742	760	746	811
Hunters and fishermen.....	Males..... Females.....	.....	1	.....	.....	.....	1	.....	.....	.....	1	1	.....
Inspectors.....	Males..... Females.....	1	3	3	1	1	.....	4	3	2	3	4	3
Janitors and janitresses.....	Males..... Females.....	1	2	5	3	1	5	3	1	4	6	6	5
Journalists and publishers.....	Males..... Females.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....

Laborem.	Males.....	182	187	215	217	199	181	159	173	159	165	170	189
	Females.....												
Laundress and laundresses.	Males.....	2			3	1					1	1	1
	Females.....	1	1	4	1		4	2	4	3	2	1	3
Lawyers.	Males.....	4	3	5	12	4	7	2	5	6	6	2	6
	Females.....												
Librarians.	Males.....												
	Females.....				1								
Liverymen.	Males.....	4	2	6	2	3	5	2	1	3	2	2	7
	Females.....												
Live stock buyers and shippers.	Males.....	5	2	4	3	5	1	2	1	1	3	3	3
	Females.....												
Lumbermen.	Males.....	3	2	1	2	2	2	1	5	5	3	2	4
	Females.....												
Machinists.	Males.....	24	27	23	25	22	17	10	19	14	19	17	21
	Females.....												
Mail carrier.	Males.....	3	1	1		4	2	3			4	3	1
	Females.....												
Mail clerks (railway).	Males.....	1											1
	Females.....												
Managers and superintendents.	Males.....	5	8	5	7	8	5	9	6	6	9	12	6
	Females.....								1				
Manufacturers.	Males.....	3	2	7	6	3	4	5	2	1	6	6	6
	Females.....												
Marble and stone cutters.	Males.....			1								2	1
	Females.....												
Masons.	Males.....	8	5	10	10	7	5	10	7	10	9	10	10
	Females.....												
Mechanics.	Males.....	4	4	4	3	4	9	3	7	10	6	8	12
	Females.....												
Merchants and dealers.	Males.....	57	37	56	40	42	51	35	46	35	57	34	64
	Females.....												

TABLE No. 9—Continued.

OCCUPATIONS.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Farmers and farm laborers.....	Males..... Females.....	462	441	540	492	412	368	345	370	352	340	384	387
Firemen (city).....	Males..... Females.....	2	1	1	1	2	3	3	1	1	.....	1	2
Furriers.....	Males..... Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gardeners, florists and nurserymen.....	Males..... Females.....	5	1	5	5	7	4	.....	9	3	1	.....	3
Glassworkers.....	Males..... Females.....	8	3	4	9	3	2	1	6	2	7	6	5
Gunsmith and locksmith.....	Males..... Females.....	2	.....	.....	.....	1	1	.....	.....	.....	1	.....	.....
Hairdressers, manicurists and masseurs.....	Males..... Females.....	.....	1	1	1	.....	.....	.....	.....	1	.....	2	.....
Harness makers and saddlers.....	Males..... Females.....	3	3	2	3	4	2	3	.....	2	3	2	4
Hotel and boarding house keepers.....	Males..... Females.....	5 1	2	3 2	7 1	6 2	4	4	1	2	2	3 2	5
Housework (general).....	Males..... Females.....	1,003	991	1,242	938	828	815	834	800	742	760	746	811
Hunters and fishermen.....	Males..... Females.....	.....	1	.....	.....	.....	1	.....	.....	.....	1	1	.....
Inspectors.....	Males..... Females.....	1	3	3	1	1	.....	4	3	2	3	4	3
Janitors and janitresses.....	Males..... Females.....	1	2	5	3	1	5	3	1	4	6	6	5
Journalists and publishers.....	Males..... Females.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....

Laborers.....	Males.....	182	187	215	217	199	181	159	173	159	165	170	189
	Females.....												
Laundresses and laundresses.....	Males.....	2			3	1					1	1	1
	Females.....	1	1	4	1		4	2	4	3	3	1	3
Lawyers.....	Males.....	4	3	5	12	4	7	2	5	6	6	2	6
	Females.....												
Librarians.....	Males.....												
	Females.....				1								
Liverymen.....	Males.....	4	2	6	2	3	5	2	1	3	2	2	7
	Females.....												
Live stock buyers and shippers.....	Males.....	5	2	4	3	5	1	2	1	1	3	3	3
	Females.....												
Lumbermen.....	Males.....	3	2	1	2	2	2	1	5	5	3	2	4
	Females.....												
Machinists.....	Males.....	24	27	23	25	22	17	10	19	14	19	17	21
	Females.....												
Mail carrier.....	Males.....	3	1	1		4	2	3			4	3	1
	Females.....												
Mail clerks (railway).....	Males.....	1											1
	Females.....												
Managers and superintendents.....	Males.....	5	8	5	7	8	5	9	6	6	9	12	6
	Females.....								1				
Manufacturers.....	Males.....	3	2	7	6	3	4	5	2	1	6	6	6
	Females.....												
Marble and stone cutters.....	Males.....			1								2	1
	Females.....												
Masons.....	Males.....	8	5	10	10	7	5	10	7	10	9	10	10
	Females.....												
Mechanics.....	Males.....	4	4	4	3	4	9	3	7	10	6	8	12
	Females.....												
Merchants and dealers.....	Males.....	57	37	56	40	42	51	35	46	35	57	34	64
	Females.....												

TABLE No. 9—Continued.

OCCUPATIONS.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Messengers and porters.....	Males..... Females.....	3	5	3	6	2	3	2	1	7	2	1	5
Millers.....	Males..... Females.....	4	9	2	6	10	3	1	3	.....	7	1	14
Milliners and seamstresses.....	Males..... Females.....	3	8	2	8	12	4	6	9	1	1	3	6
Miners and quarrymen.....	Males..... Females.....	23	30	28	20	19	12	12	20	17	11	20	16
Molders, iron and steel workers.....	Males..... Females.....	13	11	9	9	2	5	11	11	3	9	3	6
Musicians.....	Males..... Females.....	1	1	1	1	1	1	1	2	1	2	2	3
Nuns.....	Males..... Females.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nurses.....	Males..... Females.....	4	1	3	2	2	5	2	1	1	1	1	1
Oculists and opticians.....	Males..... Females.....	.....	.....	3	.....	1	.....	.....	.....	1	.....	.....	.....
Oil workers.....	Males..... Females.....	.....	.....	2	.....	2	3	1	.....	.....	2	1	3
Osteopaths and chiropractioneer.....	Males..... Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Packers.....	Males..... Females.....	.....	1	.....	1	.....	.....	1	.....	.....	.....	1	1
Painters, glaziers and varnishers.....	Males..... Females.....	14	7	13	18	23	13	11	18	12	11	16	17
Paperhangers, decorators and window dressers.....	Males..... Females.....	2	2	.....	1	.....	.....	2	2	1	1	1	2

Peddlers.....	Males.....	2	4	1	2	.....	1	.....	.....	.....	4	2	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Photographers.....	Males.....	2	.....	3	.....	.....	.....	1	1	1	1	1	3
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Physicians and surgeons.....	Males.....	19	9	9	13	15	13	3	12	12	4	18	11
	Females.....	2	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....
Plasterers and lathers.....	Males.....	2	6	6	5	4	5	2	3	2	1	7	4
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plumbers.....	Males.....	7	2	2	5	4	5	2	2	3	3	1	5
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Policemen, detectives and watchmen.....	Males.....	7	4	11	11	.....	11	7	10	8	8	4	12
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Postmasters.....	Males.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potters.....	Males.....	.....	2	1	.....	.....	.....	1	2	1	.....	.....	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Professors and teachers.....	Males.....	5	7	2	2	3	2	7	3	4	5	3	1
	Females.....	2	8	9	4	7	3	1	4	3	8	5	3
Public service (federal, state, county and city officials).....	Males.....	1	3	5	7	3	4	3	.....	3	3	6	6
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salesmen and saleswomen.....	Males.....	11	9	9	3	14	5	4	6	5	10	7	8
	Females.....	2	2	4	3	2	2	1	1	.....	2	2	1
Saw and planing mills.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scientists.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sculptor.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Servants, caretakers and attendants.....	Males.....	3	2	9	1	4	2	2	3	.....	2	.....	4
	Females.....	3	21	12	3	2	2	1	4	1	2	2	6
Shoemakers.....	Males.....	5	3	12	9	9	5	5	2	4	9	6	10
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE No. 9—Continued.

OCCUPATIONS.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Showmen.....	Males..... Females.....			1									
Soldiers and sailors.....	Males..... Females.....	3	6	9	10	4	7	5	6	1		2	2
Steamboat and ferryboat.....	Males..... Females.....		2		5	2	2	1			2	3	
Steam railway employes.....	Males..... Females.....	18	33	28	25	37	15	18	13	21	27	16	15
Stenographers and secretaries.....	Males..... Females.....	1	1	1	1	1	1		1	2	1	2	1
Street sidewalk pavers and repairers.....	Males..... Females.....	2			2				3	1			
Structural ironworkers.....	Males..... Females.....	2											
Students.....	Males..... Females.....	7	11	16	14	9	8	9	10	9	5	9	9
Surveyors and civil engineers.....	Males..... Females.....	4	5	10	9	4	4	8	9	9	9	5	11
Tailors and pressers.....	Males..... Females.....			1	1	1			2		4	2	2
Tanners and curriers.....	Males..... Females.....	8	3	5	2	7	5	8	6	4	4	3	3
Teamsters and drivers.....	Males..... Females.....	1	1	1		2	1	1	1	2	1		
Telegraph and telephone operators.....	Males..... Females.....	9	14	16	13	16	17	16	13	12	13	9	17
Tinners.....	Males..... Females.....	4	1	4	2	2	5	4	2	4	1	3	2
					2	1	1		1			1	1
		2	3	2	3	4	4	4	3	3		3	2

Undertakers.....	Males.....	1	2	2	2	2	2	1	1	2	1	2
	Females.....											
Upholsterers.....	Males.....	2	1					1	1	1		
	Females.....											
Veterinary surgeons.....	Males.....	3	1		2	3	1			1	3	1
	Females.....											
Watchmakers, jewelers and lapidaries.....	Males.....	1	1	1	1		1	2	3	1	2	2
	Females.....											
Weavers.....	Males.....			1	1	1	1				1	
	Females.....										1	
Wood workers.....	Males.....	3	4	3	1	2	1	2	4	2	1	3
	Females.....											1
No occupation reported.....	Males.....	131	96	153	120	132	113	105	96	94	119	112
	Females.....	101	51	97	193	199	138	132	145	158	142	162
Total.....	Males.....	1,325	1,239	1,478	1,393	1,276	1,129	1,039	1,093	1,037	1,085	1,157
	Females.....	1,135	1,100	1,395	1,179	1,067	987	998	1,001	943	945	909
Total 15 years and over.....												1,231
Under 15 years.....												1,011
Grand total.....												



TABLE No. 9—Continued.

*Showing Deaths by Occupations and Ages, for the Year Ending December 31, 1914.*

OCCUPATIONS.	SEX.	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	Un- known.	Totals.	
		to 19.	to 24.	to 29.	to 34.	to 39.	to 44.	to 49.	to 54.	to 59.	to 64.	to 69.	to 74.	to 79.	to 90.	Males.		Fe- males.	
Actors and actresses.....	Males..... Females.....			1 1	1 1	1				1								3	2
Aeronauts and aviators.....	Males..... Females.....			1														1	
Architects.....	Males..... Females.....								1		1	1	2		1			5	
Artists and authors.....	Males..... Females.....					1	1	1			1			1				4	2
Athletes.....	Males..... Females.....		2		1			2										5	
Bakers and confectioners.....	Males..... Females.....	3 1	2 1	3 1	5 1	3 1	2 1	3 1	3 1	3 2	4 3	3 5		3 1	4 2			39	2
Bankers, brokers and officials of companies.....	Males..... Females.....				1		4	3	4	9	6	5	3	4	7			46	
Barbers.....	Males..... Females.....	1	6	16	10	7	12	7	11	10	3	6	5	7	2			103	
Bartenders and saloonkeepers.....	Males..... Females.....			6	12	6	16	10	20	11	7	3	1	1	1			94	
Basket makers and broom makers.....	Males..... Females.....						1	3	1			2		1	3			11	

Blacksmiths and horseshoers...	Males..... Females.....	1	4	2	8	6	7	6	10	13	22	11	23	11	18	1	143
Bookbinders.....	Males..... Females.....				1				1	1				1			3
Bookkeepers, clerks and copyists.....	Males..... Females.....	9 3	34 8	22 7	15 4	7 5	15 3	12 3	17 3	6 1	11 1	7 5	3				174 38
Brewers, distillers, etc.....	Males..... Females.....		4	2	2	2	2	3	2	3		1	1	1	1		21
Brickmakers.....	Males..... Females.....											1					1
Builders and contractors.....	Males..... Females.....		2	2	3	6	9	9	7	10	11	12	9	12	8	2	102
Butchers.....	Males..... Females.....		1	6	2	7	9	6	8	8	9	5	9	5	2	1	78
Cabinet makers.....	Males..... Females.....	1		2	3	1	1	6	2	5	5	2	5	10	6		49
Carpenters.....	Males..... Females.....	1	6	6	8	9	25	19	38	44	47	55	64	66	68	7	463
Carriage and wagon makers.....	Males..... Females.....		1	1	1	1	2	2	2	3	4	0	5	9	1		35
Cashiers.....	Males..... Females.....				1	1		1	1				1				3
Chauffeurs.....	Males..... Females.....		3	3	1	2											9
Chemists and druggists.....	Males..... Females.....	1	1	1	3	5	4	7	3	3	5	6	6	6	3		53
Chiroprodists.....	Males..... Females.....																
Cigar makers.....	Males..... Females.....		1 3	2 1	2 1	4 1	4 2	2 1	1 1	1 1	3 2	3 2	3		1		23 7
Cleaners and dyers.....	Males..... Females.....										1	1					2

TABLE No. 9—Continued.

OCCUPATIONS.	Sex.	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	Un- known.	Totals.	
		to 19.	to 24.	to 29.	to 34.	to 39.	to 44.	to 49.	to 54.	to 59.	to 64.	to 69.	to 74.	to 79.	to 89.	Males.		Fe- males.	
Clergymen.....	Males.....			3		1	3	2	4	6	5	12	17	14	23	4		94	2
	Females.....			1						1									
Collectors, agents and auc- tioners.....	Males.....		2	1	9	6	3	7	10	6	15	9	7	4	3			82	3
	Females.....			1				1		1									
Commercial travelers.....	Males.....		1	8	4	9	8	2	8	10	10	2	1	1			1	65	
	Females.....																		
Compositors, printers and pressmen.....	Males.....	4	6	5	4	5	3	4	9	3	9	6	6	4	3			71	1
	Females.....		1																
Cooks and cutlers.....	Males.....			5	2	1	5	1	5	3	1	1	1		1			26	16
	Females.....		1	1			3	2	2	4			1		2				
Coopers.....	Males.....	1	1			1			4	2	2	3		8	7			29	
	Females.....																		
Dairymen and creamerymen.....	Males.....		1	1				1	2		1	2						8	
	Females.....																		
Dentists.....	Males.....				2	3	1	3	1	1	1	1	4	1	1			19	
	Females.....																		
Draftsmen.....	Males.....																		
	Females.....																		
Electricians and linemen.....	Males.....	6	11	18	12	8	4	2							1			62	
	Females.....																		
Electric railway employees.....	Males.....	1	6	1	8		2	5	3	2	2	1	1	1				33	
	Females.....																		
Elevator operators.....	Males.....								1									1	
	Females.....																		

Engineers and firemen (railway).....	Males..... Females.....	2	5	6	7	6	3	6	6	11	5	6	5	4	.....	72	.....
Engineers and firemen (stationary).....	Males..... Females.....	1	3	4	7	9	10	6	6	17	15	6	2	3	5	1	95
Engravers.....	Males..... Females.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
Factory employees.....	Males..... Females.....	6 5	6 7	7 2	2 1	7 1	4 1	6 1	9 1	6 1	6 1	7	2	3	1	.....	72 19
Farmers and farm laborers.....	Males..... Females.....	86 101	108 99	99 124	124 172	172 148	251 148	350 251	459 350	560 774	560 774	741 825	93	2	4,893	.....	.....
Firemen (city).....	Males..... Females.....	1	.....	2	1	5	.....	2	2	3	2	.....	.....	.....	.....	18	.....
Furriers.....	Males..... Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gardeners, florists and nurserymen.....	Males..... Females.....	1 4	.....	.....	4	.....	1	3	3	4	5	11	2	4	1	.....	43
Glassworkers.....	Males..... Females.....	2 5	7 7	8 3	3 3	6 5	6 5	3 1	1 1	.....	.....	.....	.....	.....	.....	56	.....
Gunsmith and locksmith.....	Males..... Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	1	.....	4
Hairdressers, manicurists and masseurs.....	Males..... Females.....	.....	.....	1	.....	.....	.....	1	.....	1	1	.....	2	1	.....	6	1
Harness makers and saddlers.....	Males..... Females.....	.....	.....	1	2	.....	.....	1	6	1	4	4	2	9	1	.....	31
Hotel and boarding house keepers.....	Males..... Females.....	1 .....	2 1	6 1	3 .....	2 1	4 .....	4 2	6 2	7 1	5 2	.....	.....	2	1	.....	44 10
Housework (general).....	Males..... Females.....	209 469	540 568	607 569	664 750	768 946	1,069 1,153	1,028 1,043	120 13	.....	.....	.....	.....	.....	.....	10,516	.....

TABLE No. 9—Continued.

Occupations.	Sex.	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	Un- known.	Totals.	
		to 19.	to 24.	to 29.	to 34.	to 39.	to 44.	to 49.	to 54.	to 59.	to 64.	to 69.	to 74.	to 79.	to 89.	to 90.		Males.	Females.
Hunters and fishermen.	Males							2			1	1						4	
	Females																		
Inspectors.	Males	1		4	3	4	2	2	2	3	4	1	1	1				28	
	Females																		
Janitors and janitresses.	Males	1			3	4	4	3	8	1	7	6	5					42	
	Females																		
Journalists and publishers.	Males			1								1	1					3	
	Females																		
Laborers.	Males	78	160	157	171	157	152	152	194	198	222	180	187	115	62	13	8	2,196	
	Females																		
Laundresses and laundresses.	Males	1	2	1	2		1	1	1									9	26
	Females	1	2	5	1	3	3	5	2	2				1	1				
Lawyers.	Males		1	2	2	3	2	1	6	5	4	7	14	9	4	2		62	
	Females																		
Librarians.	Males																		
	Females			1															1
Liverymen.	Males			2	1	1	2	6	1	4	4	5	7	1	4	1		39	
	Females																		
Live stock buyers and shippers.	Males		2		1	1		3	3	3	7	7	4	1	1			33	
	Females																		
Lumbermen.	Males		2	2	2			1	2	2	4	2	7	5	1	2		32	
	Females																		
Machinists.	Males	15	16	20	21	22	21	23	20	17	21	15	10	11	6			238	
	Females																		
Mail carrier.	Males	1		3		2		1	3	1	1	3	4	2	1			22	
	Females																		



TABLE No. 9—Continued.

OCCUPATIONS.	SEX.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.	70 to 74.	75 to 79.	80 to 89.	90 and over.	Un- known.	Totals.	
																		Males.	Females.
Oil workers.....	Males..... Females.....	1	1	1	2	3	2	2			2	1			1			14	
Osteopaths and chiroprac- tioners.....	Males..... Females.....				1														1
Packers.....	Males..... Females.....	1								1	2		1					5	
Painters, glaziers, and var- nishers.....	Males..... Females.....	1	7	11	6	8	13	15	16	19	14	26	16	11	8	1	1	173	
Paper hangers, decorators and window dressers.....	Males..... Females.....	1			2	2	2	1		1		1	1		3			14	
Peddlers.....	Males..... Females.....		1	1	1	2	1	1	3	2	4	3		2	1			21	
Photographers.....	Males..... Females.....		1	1	2	1	1	3	1	1			1	1	2			13	2
Physicians and surgeons.....	Males..... Females.....		4	3	2	5	6	6	10	10	19	28	19	13	15	4		138	4
Plasterers and lathers.....	Males..... Females.....	1	1	1	1	2	3	1	2	4	9	6	5	8	4			47	
Plumbers.....	Males..... Females.....	4	6	6	5	7	6	1	3	2	2	1						41	
Policemen, ▼ detectives and watchmen.....	Males..... Females.....	2	2	5	6	11	8	10	12	15	7	9	3	3				93	





TABLE No. 9—Continued.

OCCUPATIONS.	Sex.	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	Un- known.	Totals.	
		to 19.	to 24.	to 29.	to 34.	to 39.	to 44.	to 49.	to 54.	to 59.	to 64.	to 69.	to 74.	to 79.	to 89.	and over.		Males.	Fe- males.
Street sidewalk pavers and repairers.....	Males.....			1		1	1			1								4	
	Females.....																		
Structural ironworkers.....	Males.....							1			1							2	
	Females.....																		
Students.....	Males.....	99	16	1														116	87
	Females.....	73	11	2	1														
Surveyors and civil engineers.....	Males.....			1	2	1	1	2		2	1		1		2			13	
	Females.....																		
Tailors and pressers.....	Males.....	1	2	8	4	4	3	4	3	4	3	4	5	3	7	3		58	4
	Females.....			1	1	2													
Tanners and curriers.....	Males.....				1	1	1	1	1		1			1	2	1		10	
	Females.....																		
Teamsters and drivers.....	Males.....	4	7	10	8	13	13	17	12	23	18	14	6	11	7	1	1	165	
	Females.....																		
Telegraph and telephone operators.....	Males.....	1	5	5	3	3	3	1	5	4	2			1	1			34	8
	Females.....	2	5	1															
Timmers.....	Males.....		1	1	3	5	1	2	3	4	3	5	5					33	
	Females.....																		
Undertakers.....	Males.....			1	3	1		2	1		3	3	1					15	
	Females.....																		
Upholsterers.....	Males.....			1			1	2	1		2							7	
	Females.....																		
Veterinary surgeons.....	Males.....			1	1		2	1		2		2	4	2				15	
	Females.....																		

Watchmakers, jewelers and lapidaries.....	Males.....	1	2	1	2	1	1	3	1	3	2	2	17	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Weavers.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Wood workers.....	Males.....	2	5	1	3	1	2	2	3	2	1	.....	27	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
No occupation reported.....	Males.....	80	53	49	55	41	56	63	106	142	198	220	35	1,891
	Females.....	123	78	57	32	22	28	48	86	114	261	432	63	.....
Total.....	Males.....	447	592	673	696	674	783	883	1,373	1,430	1,476	1,527	197	14,457
	Females.....	135	629	656	631	666	630	841	1,051	1,197	1,302	1,490	183	12,670
Total 15 years and over.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27,127
Under 15 years.....	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,743
Grand total.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35,869
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE No. 10.

*Deaths from Tuberculosis, all Forms, with Rates per 100,000 Population, for Certain Occupations of Each Sex, for Year 1914.*

OCCUPATIONS.	Number of Deaths, 15 Years of Age and Over.	Death Rate Per 100,000.
<b>MALES.</b>		
Farmers and farm laborers.....	430	15.3
Laborers.....	362	12.9
No occupations reported.....	161	5.7
Merchants and dealers.....	49	1.7
Bookkeepers, clerks and copyists.....	45	1.6
Carpenters.....	45	1.6
Steam railway employes.....	40	1.4
Machinists.....	33	1.1
Students.....	31	1.1
Painters, glassiers and varnishers.....	26	.9
Factory employes.....	25	.8
Miners and quarrymen.....	24	.8
Barbers.....	23	.8
Glassworkers.....	19	.6
Molders, iron and steel workers.....	19	.6
Teamsters and drivers.....	17	.6
Masons.....	16	.5
Compositors, printers and pressmen.....	15	.5
Mechanics.....	15	.5
Blacksmiths and horseshoers.....	14	.5
Salesmen.....	14	.5
Butchers.....	13	.4
Engineers and firemen (stationary).....	13	.4
Professors and teachers.....	13	.4
Electricians.....	12	.4
Tailors.....	12	.4
Builders and contractors.....	11	.3
Messengers and porters.....	11	.3
Policemen, detectives and watchmen.....	11	.3
Bartenders and saloonkeepers.....	10	.3
Servants, caretakers and attendants.....	9	.3
Plumbers.....	8	.2
Tinners.....	8	.2
Cabinet makers.....	7	.2
Clergymen.....	7	.2
Commercial travelers.....	7	.2
Shoemakers.....	7	.2
Bakers and confectioners.....	6	.2
Electric railway employes.....	6	.2
Janitors.....	6	.2
Managers and superintendents.....	6	.2
Physicians and surgeons.....	6	.2
Chauffeurs.....	5	.1
Chemists and druggists.....	5	.1
Cooks and enterers.....	5	.1
Firemen (city).....	5	.1
Hotel and boarding house keepers.....	5	.1
Liverymen.....	5	.1
Woodworkers.....	5	.1
Bankers, brokers and officials of companies.....	4	.1

TABLE No. 10—Continued.

OCCUPATIONS.	Number of Deaths, 15 Years of Age and Over.	Death Rate Per 100,000.
Cigar makers.....	4	.1
Collectors, agents and auctioneers.....	4	.1
Gardeners, florists and nurserymen.....	4	.1
Journalists and publishers.....	4	.1
Paper hangers, decorators and window dressers.....	4	.1
Soldiers and Sailors.....	4	.1
Telegraph and telephone operators.....	4	.1
Coopers.....	3	.1
Engineers and firemen (railway).....	3	.1
Laundrers.....	3	.1
Lawyers.....	3	.1
Mail clerks (railway).....	3	.1
Millers.....	3	.1
Plasterers and lathers.....	3	.1
Undertakers.....	3	.1
Basket makers and broom makers.....	2	.07
Bookbinders.....	2	.07
Brewers, distillers, etc.....	2	.07
Carriage and wagon makers.....	2	.07
Inspectors.....	2	.07
Live stock buyers and shippers.....	2	.07
Musicians.....	2	.07
Oil workers.....	2	.07
Street sidewalk pavers and repairers.....	2	.07
Steamboat employes.....	2	.07
Watchmakers, jewelers and lapidaries.....	2	.07
Artists and authors.....	1	.03
Harness makers and saddlers.....	1	.03
Manufacturers.....	1	.03
Marble and stone cutters.....	1	.03
Milliners.....	1	.03
Peddlers.....	1	.03
Photographers.....	1	.03
Potters.....	1	.03
Structural ironworkers.....	1	.03
Surveyors and civil engineers.....	1	.03
Upholsterers.....	1	.03
FEMALES.		
Housework (general).....	1,671	59.7
No occupations reported.....	61	2.1
Students.....	30	1.0
Professors and teachers.....	15	.5
Servants, caretakers and attendants.....	14	.5
Bookkeepers, clerks and copyists.....	12	.4
Milliners and seamstresses.....	11	.3
Nurses.....	8	.2
Factory employes.....	7	.2
Cigar makers.....	5	.1
Laundresses.....	3	.1
Telegraph and telephone operators.....	3	.1
Bakers and confectioners.....	2	.07
Cashiers.....	2	.07
Musicians.....	2	.07
Stenographers and secretaries.....	2	.07
Artists and authors.....	1	.03
Saleswomen.....	1	.03
Tailoresses.....	1	.03
Weavers.....	1	.03

TABLE No. 11.

*Poliomyelitis by Months, Ages and Counties, for the Year Ending  
December 31, 1914.*

## MONTHS.

January.....	2	July.....	2
February.....	1	August.....	4
March.....	2	September.....	5
April.....	3	October.....	3
May.....	2	November.....	2
June.....	1	December.....	0

## AGES.

Under 1 year.....	6	10 to 14 years.....	1
In 1 year.....	8	15 to 19 years.....	1
In 2 years.....	1	20 to 24 years.....	1
In 3 years.....	5	55 to 59 years.....	1
In 5 to 9 years.....	3		

## COUNTIES.

Blackford.....	1	Lawrence.....	1
Clay.....	1	Madison.....	1
Daviess.....	1	Marion.....	1
Elkhart.....	1	Perry.....	1
Grant.....	1	Pike.....	1
Greene.....	2	Porter.....	1
Hamilton.....	1	Posey.....	1
Henry.....	1	St. Joseph.....	2
Jackson.....	1	Tipton.....	1
Jennings.....	1	Vanderburgh.....	1
Kosciusko.....	1	Vermillion.....	1
Lake.....	1	Washington.....	2

Total males.....	17
Total females.....	10
Total.....	27

TABLE No. 12.

*Table of Cases of Diseases Reported, by Counties.*

COUNTIES.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria and Croup.	Chickenpox.	Tuberculosis.	Cerebro- Spinal Fever.	Acute Polio- myelitis.	Trachoma.
Adams.....	73	16	21	36	...	11	4	1	...	...	...
Allen.....	10	27	164	196	203	340	81	...	3	1	...
Bartholomew.....	9	2	143	19	...	21	...	6	...	...	48
Benton.....	4	20	10	...	...	...	...	...	...	...	...
Blackford.....	4	107	45	41	3	3	1	...	...	...	...
Boone.....	19	10	8	53	...	18	...	2	...	...	...
Brown.....	9	28	14	1	101	4	5	13	...	...	...
Carroll.....	17	21	25	11	4	8	...	...	...	1	...
Cass.....	115	55	47	14	6	11	12	1	...	1	...
Clark.....	8	82	79	37	...	17	...	16	...	...	...
Clay.....	5	6	409	19	3	11	2	2	...	...	...
Clinton.....	14	49	327	42	18	15	1	3	...	1	1
Crawford.....	8	53	22	37	3	32	...	...	...	...	...
Davies.....	26	6	13	15	3	35	...	...	...	1	...
Dearborn.....	13	...	14	11	17	12	...	8	1	...	...
Decatur.....	9	18	3	35	16	3	...	1	...	...	...
Dekalb.....	13	1	4	4	43	1	31	2	...	...	...
Delaware.....	27	386	19	383	60	73	160	12	...	...	...
Dubois.....	17	...	98	3	38	24	11	14	1	...	...
Elkhart.....	32	8	422	41	8	121	50	1	2	3	...
Fayette.....	1	...	40	12	...	9	...	...	...	...	...
Floyd.....	28	326	93	100	3	70	...	21	...	...	...
Fountain.....	5	23	52	23	6	1	1	3	...	...	...
Franklin.....	...	...	1	...	...	2	...	...	1	...	...
Fulton.....	8	1	14	103	...	1	...	24	...	...	...
Gibson.....	14	83	43	18	293	22	11	7	...	...	...
Grant.....	20	74	8	32	2	74	12	3	...	...	...
Greene.....	42	27	244	43	40	27	1	7	5	...	...
Hamilton.....	13	21	110	30	...	55	2	4	...	1	...
Hancock.....	17	124	43	31	6	6	3	13	...	...	...
Harrison.....	10	55	17	30	1	11	3	...	...	...	...
Hendricks.....	12	18	36	31	23	25	...	4	2	...	...
Henry.....	9	71	89	22	2	47	5	1	...	...	...
Howard.....	83	18	24	118	2	42	41	12	...	...	...
Huntington.....	32	25	10	116	...	7	2	1	...	5	...
Jackson.....	34	31	61	12	1	33	36	2	1	1	...
Jasper.....	...	1	...	7	...	...	...	...	...	...	...
Jay.....	13	33	45	49	2	17	12	17	...	...	...
Jefferson.....	21	125	44	52	...	12	...	18	1	...	...
Jennings.....	14	3	57	3	2	24	...	4	...	...	...
Johnson.....	12	59	171	30	2	25	...	...	...	...	...
Knox.....	41	133	35	35	15	62	2	7	...	...	1
Kosciusko.....	30	21	60	70	5	23	...	1	...	1	...
Lagrange.....	23	23	42	51	...	6	...	31	...	6	...
Lake.....	95	108	61	125	27	139	77	31	5	1	...
Laporte.....	32	...	8	112	40	77	4	11	...	1	...
Lawrence.....	43	...	199	76	1	59	...	...	...	...	...
Madison.....	26	113	29	221	...	270	10	4	...	...	1
Marion.....	364	517	5,457	574	456	504	375	597	34	4	...
Marshall.....	5	1	17	49	...	26	1	2	...	...	...
Martin.....	17	8	50	...	...	11	...	1	...	...	...
Miami.....	22	3	25	34	...	22	9	10	1	...	...
Monroe.....	10	...	34	27	...	21	...	4	...	...	...
Montgomery.....	21	7	409	262	20	17	94	8	...	...	...
Morgan.....	16	3	28	16	16	13	4	...	...	...	...

TABLE No. 12—Continued.

COUNTIES.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria and Croup.	Chickenpox.	Tuberculosis.	Cerebro- Spinal Fever.	Acute Polio- myelitis.	Trachoma.
Newton.....		11		7	3	3					
Noble.....	27	44	21	7	10	14	7	33		1	
Ohio.....								6			
Orange.....	16	24	157	13	5	10		2	1		
Owen.....	20	15	72	18	1	5		1			
Parke.....	31	6	33	9		29	1	4			
Perry.....	7	7	9	2	12	5		8			
Pike.....	28	26	152	12	35	13	4	37		1	
Porter.....	11	23	76	15	9	29	22	12	1		
Posey.....	19	147	25	26	4	36	1	2		1	
Pulaski.....	8	1	3	18		6					
Putnam.....	15		12	13		17		2			
Randolph.....	30	2	11	107	31	54	8	5		1	
Ripley.....	10		9	24		30		3			
Rush.....	4	4	7	38	2	9	9	3			
Scott.....	7	5				1		5	1		
Shelby.....	8	122	24	16	57	13	1	1			
Spencer.....	11	85	6	13		12					
Starke.....	4		10	6	4	5		1			
Steuben.....	13	14	33	8	1	2					
St. Joseph.....	81	1	143	120	98	87	45	19		5	
Sullivan.....	26	47	41	21	3	14		2			
Switzerland.....	11		3	3	25	2		8	1		
Tiptecanoe.....	46	14	417	73	10	16		9		1	
Tipton.....	12		64	5		26				1	
Union.....	3		5	12		9	2				
Vanderburgh.....	10	82	17	8	2	17	1	4			
Vermillion.....	5	10	17	5		12	4	10			
Vigo*.....											
Wabash.....	16	34	9	10		4	2	1	1	1	
Warren.....	9	1	2	6		6		1			
Warrick.....	8	7	21	2	1	11		1			
Washington.....	64	7	130	19		19		315			
Wayne.....	49	6	28	165	5	48	26	2			
Wells.....	1	80	6	8		4					
White.....	4	7	13	52	6	6	2	2	1		
Whitley.....	1	1		3		13					
Total.....	2,189	3,783	11,110	4,404	1,842	3,123	1,132	1,429	64	40	51

\*No report.

TABLE A.

*Number of Children Born, Sex, Color; Number of Children Born to Each Mother; Nationality of Parents.*

COUNTIES.	SEX.		COLOR.		NUMBER OF CHILDREN BORN TO EACH MOTHER.												NATIONALITY OF PARENTS.												
	Total No. of Children Born.	Males.	Females.	White.		Colored.		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth and Over.	Not Reported.	American.		Foreign.		Not Re-ported.				
				Males.	Females.	Males.	Females.														Fathers.	Mothers.	Fathers.	Mothers.					
Adams.....	517	260	257	260	257	126	106	72	58	44	30	23	20	15	8	2	10	3	486	496	24	17	3	17	3	17	3		
Allen.....	2,251	1,188	1,063	1,177	1,064	787	489	336	217	134	99	63	49	25	14	13	20	5	1,947	2,002	258	222	20	1	222	20	1	20	
Bartholomew...	514	259	255	254	252	171	106	83	44	30	26	22	16	10	2	4	...	...	496	505	10	4	3	4	10	4	3	4	
Benton.....	277	146	131	146	130	83	65	34	31	15	14	18	6	4	2	...	...	...	285	270	9	5	1	...	9	5	1	...	
Blackford.....	394	202	192	202	192	98	79	82	49	30	20	9	16	7	6	...	...	1	387	383	5	9	...	...	5	9	...	...	
Boone.....	484	246	238	246	237	147	113	73	49	27	22	20	15	6	5	3	4	...	477	481	5	2	1	...	5	2	1	...	
Brown.....	157	73	84	73	84	36	23	29	12	13	8	12	8	1	4	7	4	...	152	154	3	3	2	1	...	3	3	2	1
Carroll.....	362	198	164	198	164	106	88	69	20	31	17	13	4	5	2	2	3	2	355	360	1	...	4	...	...	...	...	4	...
Cass.....	764	390	374	387	373	245	171	137	76	47	34	19	16	6	7	2	4	...	703	714	54	46	3	...	54	46	3	...	
Clark.....	527	266	261	253	235	134	124	78	58	40	34	19	14	9	4	3	9	1	509	516	7	3	3	...	7	3	3	...	
Clay.....	689	369	320	364	317	203	144	84	74	52	43	31	25	14	5	6	8	...	657	663	22	18	5	3	...	22	18	5	3
Clinton.....	581	296	285	296	284	163	127	90	65	49	26	24	17	6	5	2	5	2	575	579	3	...	1	...	...	...	...	1	...
Crawford.....	254	126	128	126	128	63	45	34	39	24	15	20	5	4	3	1	1	...	251	251	...	...	...	...	...	...	...	...	...
Davies.....	695	383	312	382	309	165	142	104	83	60	38	44	23	21	8	2	4	1	679	685	10	6	2	...	10	6	2	...	
Dearborn.....	387	200	187	199	185	108	83	63	32	38	24	16	9	5	4	2	3	...	372	376	5	3	2	...	5	3	2	...	
Decatur.....	360	187	163	187	163	95	60	69	49	28	20	14	12	7	4	1	...	...	344	348	2	...	3	1	...	...	...	3	1
Dekalb.....	512	273	239	273	239	162	120	73	55	41	22	15	10	5	5	2	1	1	483	489	21	18	3	...	21	18	3	...	
Delaware.....	1,129	607	522	591	505	353	256	189	106	65	51	46	24	16	8	6	7	2	1,081	1,091	27	23	7	1	...	27	23	7	1
Dubois.....	540	263	277	263	277	130	92	99	67	40	35	23	19	12	9	7	5	2	525	533	7	...	1	...	...	...	...	1	...
Dunkirk.....	1,136	561	575	561	575	351	279	191	114	74	43	33	20	14	7	5	3	2	1,051	1,064	70	60	4	...	70	60	4	...	



TABLE A—Continued.

COUNTIES.	Sex.	Color.				NUMBER OF CHILDREN BORN TO EACH MOTHER.												NATIONALITY OF PARENTS.													
		White.		Colored.		Total No. of Children Born.	Males.	Females.	Males.	Females.	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth and Over.	Not Reported.	American.		Foreign.		Not Re-ported.			
		Males.	Females.	Males.	Females.																			Fathers.	Mothers.	Fathers.	Mothers.				
Fayette.....	294	147	145	146	2	1	98	65	46	31	19	13	7	6	3	1	2	1	2	282	287	6	3	2	2	2	2	2	Mothers.	Fathers.	
Floyd.....	542	280	262	273	251	11	163	119	95	54	42	24	12	16	5	8	1	3	2	524	520	11	8	30	20	11	7	3	1	Mothers.	Fathers.
Fountain.....	391	200	190	191	200	1	90	90	72	38	31	30	15	10	7	5	3	2	3	381	385	8	5	4	2	2	2	2	1	Mothers.	Fathers.
Franklin.....	267	134	133	134	133	.....	54	60	41	35	28	19	7	7	3	3	2	2	2	256	260	4	2	2	3	1	4	4	2	Mothers.	Fathers.
Fulton.....	398	201	197	197	201	197	.....	98	109	59	41	28	23	6	13	11	6	3	1	388	394	3	1	3	1	4	4	4	2	Mothers.	Fathers.
Gibson.....	361	288	353	274	8	14	177	142	92	75	48	34	37	17	10	10	2	4	1	636	645	3	1	7	3	1	7	7	7	Mothers.	Fathers.
Grant.....	1,095	496	498	586	480	13	320	248	189	111	75	58	29	28	15	9	6	6	2	1,046	1,067	30	20	11	1,046	1,067	30	20	11	Mothers.	Fathers.
Greene.....	895	454	441	454	440	1	230	163	131	110	75	77	40	31	13	9	8	6	2	823	847	60	43	7	823	847	60	43	7	Mothers.	Fathers.
Hamilton.....	543	279	264	272	259	7	172	129	70	57	41	23	19	8	6	5	4	1	1	532	536	3	2	1	334	334	1	2	1	Mothers.	Fathers.
Hancock.....	341	177	164	177	164	.....	117	77	56	33	16	20	8	6	4	1	1	1	1	334	334	1	2	1	334	334	1	2	1	Mothers.	Fathers.
Harrison.....	434	241	193	234	192	7	129	75	60	58	26	34	27	9	8	4	2	1	1	425	431	2	3	1	425	431	2	3	1	Mothers.	Fathers.
Hendricks.....	397	219	178	218	176	1	91	89	78	48	30	24	14	7	6	2	4	2	2	390	393	3	1	1	390	393	3	1	1	Mothers.	Fathers.
Henry.....	594	315	279	312	276	3	163	159	98	61	38	17	13	10	3	2	1	7	2	579	583	8	7	4	579	583	8	7	4	Mothers.	Fathers.
Howard.....	759	373	386	369	384	4	231	178	117	84	56	30	27	14	7	8	3	4	1	712	722	39	31	2	712	722	39	31	2	Mothers.	Fathers.
Huntington.....	746	381	365	381	365	.....	213	175	127	79	61	38	20	16	8	4	2	3	3	722	726	20	14	2	722	726	20	14	2	Mothers.	Fathers.
Jackson.....	540	275	265	274	263	1	119	124	74	55	53	28	28	13	10	3	3	1	1	526	530	7	7	5	526	530	7	7	5	Mothers.	Fathers.
Jasper.....	349	180	169	180	169	.....	99	63	59	44	29	17	8	13	5	3	5	2	2	318	331	26	15	2	318	331	26	15	2	Mothers.	Fathers.
Day.....	584	296	288	296	288	.....	163	129	90	68	43	26	28	10	16	1	3	5	2	568	570	6	6	2	568	570	6	6	2	Mothers.	Fathers.
Jefferson.....	335	155	180	150	174	5	104	68	52	27	34	16	10	17	3	1	2	1	1	328	332	4	3	1	328	332	4	3	1	Mothers.	Fathers.
Jennings.....	294	155	139	148	134	7	81	53	39	30	24	22	19	10	7	6	1	1	1	278	286	7	3	4	278	286	7	3	4	Mothers.	Fathers.
Johnson.....	402	220	182	215	177	5	115	83	66	46	33	27	13	12	4	2	1	1	1	395	400	1	1	4	395	400	1	1	4	Mothers.	Fathers.
Knox.....	1,032	520	512	519	507	1	257	203	152	124	89	74	55	33	21	10	7	5	2	950	972	61	50	11	950	972	61	50	11	Mothers.	Fathers.
Kosciusko.....	663	352	311	352	311	.....	191	156	101	69	52	33	24	14	7	3	6	3	2	646	651	13	9	1	646	651	13	9	1	Mothers.	Fathers.
Lagrange.....	356	172	184	172	184	.....	93	69	59	42	29	26	15	11	6	1	3	2	2	348	350	3	3	1	348	350	3	3	1	Mothers.	Fathers.
Lake.....	4,032	1,997	2,035	1,995	2,024	2	11	1,085	839	665	492	317	221	143	112	52	44	21	30	1,390	1,523	2,593	2,476	16	1,390	1,523	2,593	2,476	16	Mothers.	Fathers.

Leopoldo.....	1,186	602	584	602	583	.....	1	385	251	183	119	78	55	31	28	26	11	8	10	1	823	833	350	323	2	.....
Lawrence.....	819	423	396	421	393	2	8	239	171	99	95	65	45	35	34	14	7	6	8	1	779	784	33	39	1	.....
Madison.....	1,391	790	671	711	666	9	5	415	298	214	148	108	70	56	31	16	11	11	11	2	1,399	1,338	68	39	10	.....
Marion.....	6,063	3,133	2,920	2,872	2,685	261	235	2,144	1,529	851	548	368	206	143	108	65	47	21	24	1	5,239	5,465	640	536	124	2
Marshall.....	520	263	257	263	257	.....	.....	124	132	75	66	35	29	18	17	8	7	1	5	3	503	506	11	9	1	.....
Martin.....	309	170	139	170	139	.....	.....	62	67	61	26	31	13	16	14	7	6	2	4	.....	302	303	.....	.....	1	.....
Miami.....	669	324	324	324	344	.....	.....	196	173	117	77	49	24	13	5	5	7	.....	3	.....	656	640	22	20	2	.....
Monroe.....	639	329	310	324	308	5	2	184	125	110	71	48	40	15	23	11	8	2	1	1	609	622	12	7	9	1
Montgomery.....	552	299	283	298	248	1	5	160	118	96	50	46	32	16	12	9	5	2	2	4	538	543	5	2	5	3
Morgan.....	444	243	201	243	200	.....	1	127	104	68	45	34	25	11	13	4	3	9	1	.....	426	437	3	2	8	.....
Newton.....	208	108	100	108	100	.....	.....	54	55	26	20	19	15	4	6	5	2	1	1	.....	196	197	10	10	1	.....
Noble.....	487	250	237	250	237	.....	.....	133	113	86	52	28	22	18	13	5	5	3	1	.....	473	478	11	6	1	1
Ohio.....	66	39	27	38	26	1	1	29	13	8	7	2	3	2	1	.....	.....	.....	.....	.....	63	66	2	.....	1	.....
Orange.....	399	207	192	204	182	3	.....	114	81	73	41	32	26	12	9	.....	6	.....	.....	1	394	394	3	3	.....	.....
Owen.....	266	123	143	123	140	.....	3	70	58	35	42	21	7	7	11	5	4	2	1	3	262	264	.....	.....	2	.....
Parke.....	464	246	218	245	217	1	1	114	117	58	47	31	38	21	21	4	9	2	2	.....	439	443	15	13	2	.....
Perry.....	442	226	216	226	213	.....	3	89	94	68	50	54	30	23	14	7	5	2	4	2	432	436	5	4	3	.....
Pike.....	444	224	220	223	218	1	2	109	98	63	54	36	26	17	13	11	7	6	4	.....	437	441	.....	.....	4	.....
Porter.....	393	202	181	202	191	.....	.....	106	76	64	52	28	13	15	14	10	5	4	5	1	328	341	50	41	5	1
Posey.....	433	230	203	219	194	11	9	96	92	66	59	41	28	20	12	9	5	1	2	2	419	426	5	.....	3	1
Pulaski.....	278	143	135	143	135	.....	.....	60	56	56	31	16	19	13	5	7	5	2	6	2	261	271	14	4	.....	.....
Putnam.....	407	213	194	210	193	3	1	110	83	67	38	41	27	21	8	4	4	.....	.....	2	399	403	4	3	.....	.....
Randolph.....	575	286	289	285	289	1	.....	151	138	103	63	41	28	18	13	11	4	.....	.....	.....	566	568	.....	.....	1	3
Ripley.....	341	186	155	186	155	.....	.....	89	68	38	43	38	19	18	11	2	7	2	6	.....	325	324	9	10	.....	.....
Rush.....	393	214	179	212	177	2	2	125	81	56	51	26	19	10	11	4	3	1	1	5	383	385	.....	.....	1	.....
Scott.....	159	78	81	78	81	.....	.....	40	24	28	15	21	9	8	7	3	3	1	.....	.....	157	158	1	1	.....	.....
Shelby.....	557	290	267	284	265	6	2	154	139	71	61	53	28	20	19	6	4	2	.....	.....	539	549	6	2	7	1
Spencer.....	385	203	182	197	175	6	7	90	92	53	46	33	26	21	10	3	6	3	.....	.....	377	377	2	2	.....	.....
Stark.....	290	130	130	129	130	1	.....	61	49	39	29	23	15	18	13	6	.....	.....	.....	.....	202	214	64	44	2	.....
Steuben.....	254	146	108	145	108	1	.....	53	68	51	33	22	9	10	3	2	1	.....	.....	.....	248	250	5	4	1	.....
St. Joseph.....	2,575	1,413	1,162	1,404	1,157	9	5	759	519	398	297	203	135	79	65	49	31	16	21	3	1,493	1,626	1,048	929	15	1
Sullivan.....	881	453	423	467	423	1	.....	218	184	136	111	76	53	27	35	17	9	4	9	2	781	801	84	71	9	2
Switzerland.....	193	98	95	96	94	2	1	54	40	41	17	8	.....	.....	.....	.....	.....	.....	.....	.....	188	190	2	.....	.....	.....
Tippesaw.....	730	351	379	847	375	4	4	219	157	110	91	66	33	29	11	12	3	5	2	2	645	671	67	47	6	.....
Tippecanoe.....	393	198	195	198	195	.....	.....	100	101	71	38	29	18	15	6	9	1	3	2	.....	387	388	2	2	1	.....
Union.....	116	61	55	60	55	1	.....	30	27	9	13	12	7	5	7	3	.....	.....	.....	.....	113	114	.....	.....	1	.....
Vanderburgh.....	1,728	913	815	857	776	56	39	555	435	258	180	98	70	54	35	22	5	9	6	1	1,638	1,679	58	34	17	.....
Vermillion.....	541	292	249	291	248	1	1	130	102	102	61	42	33	24	22	8	9	4	1	.....	1,359	378	177	189	1	.....
Vigo.....	1,717	889	823	851	797	38	31	497	371	248	173	117	108	75	50	32	17	13	11	5	1,519	1,570	161	126	16	.....

TABLE A—Continued.

COU	S.	Sex.		Color.				NUMBER OF CHILDREN BORN TO EACH MOTHER.												NATIONALITY OF PARENTS.				Not Re-ported.		
		Total No. of Children Born.	Males.	Females.	White.		Colored.		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth and Over.	Not Reported.	American.			Foreign.	
					Males.	Females.	Males.	Females.														Fathers.	Mothers.		Fathers.	Mothers.
Wabash.....	571	293	278	293	278	.....	.....	178	131	91	60	48	23	10	10	8	7	3	2	.....	556	561	8	6	3	.....
Warren.....	246	141	105	141	105	.....	.....	68	60	41	24	18	9	10	4	5	1	2	4	.....	242	244	1	.....	1	.....
Warrick.....	439	233	206	233	206	6	3	102	97	67	64	34	23	19	12	9	3	2	4	3	427	432	2	.....	4	1
Washington....	388	199	189	199	189	.....	.....	111	81	54	53	28	16	16	12	3	5	2	6	1	380	384	1	.....	3	.....
Wayne.....	932	470	462	456	441	14	21	257	268	125	86	56	43	47	16	12	10	6	5	1	875	884	49	42	2	.....
Wells.....	431	208	223	208	223	.....	.....	123	96	72	45	36	16	15	11	11	1	2	3	.....	416	422	8	5	3	.....
White.....	426	211	215	211	215	.....	.....	96	93	67	47	30	32	16	10	16	5	6	3	5	407	412	9	5	1	.....
Whitley.....	337	164	173	164	173	.....	.....	101	84	50	33	25	16	7	9	4	4	.....	2	1	331	331	2	2	1	1
Total.....	61,889	32,018	29,871	31,443	29,333	575	538	17,877	13,786	9,590	6,682	4,581	3,169	2,213	1,608	939	587	339	405	113	54,385	55,607	6,485	5,686	451	28

TABLE B.

## Number of Children Born Each Month; Grouped Ages of Parents.

COUNTIES.	1914.												GROUPED AGES OF PARENTS.												Not Re-ported.		
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Under 20.		20 to 30.		30 to 40.	40 to 50.	50 to 60.		60 to 70.	Fathers.	Mothers.				
													Fathers.	Mothers.	Fathers.	Mothers.			Fathers.	Mothers.				Fathers.		Mothers.	Fathers.
Adams.....	37	30	50	44	39	29	55	60	43	44	40	39	10	45	219	277	189	159	80	31	12	...	1	...	2	...	1
Allen.....	182	178	179	171	189	182	183	207	223	189	159	185	25	200	1,112	1,505	771	627	266	93	32	...	2	...	17	...	...
Barnholme..	41	52	46	34	40	43	46	40	45	45	43	34	11	66	226	265	182	162	66	18	6	...	3	...	1	...	...
Benton.....	32	28	31	22	19	25	21	20	16	18	22	21	12	23	134	152	85	90	37	10	5	...	1	...	1	...	...
Blackford...	40	31	28	26	36	31	34	28	32	47	24	38	10	61	198	200	184	113	41	18	8	...	1	...	1	...	...
Boone.....	42	56	47	20	42	45	38	41	32	38	33	40	3	53	238	266	187	137	70	27	13	...	1	...	1	...	...
Brown.....	18	19	18	8	18	16	9	12	7	13	10	9	4	19	59	82	51	40	23	16	4	...	2	...	4	...	...
Carr.....	33	31	31	27	20	16	34	29	31	37	38	31	6	41	189	219	109	84	43	16	9	...	1	...	3	...	...
Cass.....	67	67	64	70	73	61	62	62	52	64	57	61	6	76	375	433	277	223	89	27	7	...	3	...	3	...	...
Clark.....	53	45	48	39	37	39	48	46	36	43	39	46	7	56	213	270	202	164	82	26	13	...	1	...	1	...	...
Clay.....	58	61	51	55	53	59	70	66	73	57	49	32	8	78	319	371	227	197	103	37	16	...	4	...	7	...	...
Clinton.....	60	42	48	41	56	41	36	60	48	40	43	34	15	54	284	333	194	164	66	28	19	...	1	...	1	...	...
Crawford....	23	22	28	19	28	16	26	21	24	15	16	15	15	22	92	127	102	94	43	8	18	...	1	...	4	...	...
Davies.....	55	48	58	59	59	52	55	50	64	63	52	56	12	66	306	371	253	213	97	40	16	...	2	...	1	...	...
Dearborn...	31	39	38	24	28	25	33	29	36	24	35	37	5	29	153	215	151	114	62	21	6	...	1	...	1	...	...
Decatur.....	29	24	33	34	34	26	26	33	27	41	25	17	...	36	151	188	135	108	47	16	9	...	3	...	4	...	...
Dekalb.....	36	43	46	34	44	45	40	45	40	53	43	38	8	60	247	265	175	159	67	23	5	...	3	...	4	...	...
Delaware....	111	72	103	87	81	94	110	97	86	107	93	74	20	164	555	613	400	292	115	43	15	...	5	...	2	...	...
Dubuque....	46	38	41	30	34	46	51	52	50	53	46	46	3	34	225	287	212	181	82	30	10	...	1	...	1	...	...
Elkhart....	78	109	121	80	94	94	102	88	98	87	84	90	18	101	540	668	439	304	106	51	19	...	...	...	3	...	...



LaPorte.....	95	93	119	111	111	92	79	119	104	98	84	70	9	98	567	738	443	292	126	47	22	1	1	4	2
Lawrence.....	78	128	75	52	103	73	79	80	66	63	67	61	57	23	119	391	438	370	105	35	15	3	3	3	1
Madison.....	112	123	133	103	105	104	124	122	133	117	106	92	35	35	182	698	442	321	164	49	25	4	9	9	3
Marion.....	542	482	497	442	472	495	556	512	437	480	479	479	109	730	2,965	3,478	2,150	1,589	634	205	93	6	1	15	1
Marshall.....	38	52	45	44	34	35	40	53	41	43	48	42	47	227	294	164	155	81	29	16	2	2	1	1	1
Martin.....	22	31	26	17	23	34	24	18	37	24	19	28	1	30	135	164	109	83	46	26	9	1	2	2	1
Miami.....	59	59	75	45	50	44	56	57	55	62	47	51	7	70	345	398	217	163	79	28	8	2	2	2	1
Monroe.....	51	44	53	45	48	56	51	60	60	54	56	52	10	89	311	387	212	149	75	25	13	1	1	7	1
Montgomery.....	47	40	46	41	45	45	51	50	49	51	42	41	7	51	290	311	201	160	68	26	9	5	5	5	5
Morgan.....	40	36	27	42	24	42	42	38	45	33	41	29	6	57	203	236	147	132	68	14	7	8	8	8	8
Newton.....	20	16	25	12	15	18	20	23	12	13	14	19	2	24	90	111	79	63	31	9	4	1	1	1	1
Noble.....	37	35	45	47	45	45	41	44	29	42	33	42	17	94	237	248	163	125	58	17	10	1	1	1	1
Ohio.....	5	3	6	5	6	5	5	7	5	9	6	4	1	8	35	36	19	17	9	5	1	1	1	1	1
Orange.....	31	30	38	28	35	23	29	41	33	40	44	28	6	61	196	214	136	110	48	11	11	1	1	1	1
Owen.....	23	25	30	28	20	18	19	22	17	19	26	17	2	36	110	132	98	79	42	10	8	1	1	2	1
Parke.....	39	41	42	27	41	41	37	40	46	35	30	37	6	56	198	244	173	136	65	19	10	1	1	3	1
Perry.....	41	30	38	29	27	38	48	33	49	45	24	38	8	47	194	219	153	154	62	19	11	3	4	4	1
Pike.....	31	28	30	27	29	32	47	34	56	50	41	36	8	59	210	236	146	117	89	27	2	2	4	1	1
Porter.....	31	27	30	32	27	36	39	39	25	29	38	30	2	33	156	137	141	134	70	29	10	1	4	4	1
Posey.....	37	37	40	25	39	30	36	29	50	33	38	33	3	31	174	234	167	139	60	22	16	1	6	1	1
Pulaski.....	22	27	21	24	22	19	27	26	21	24	22	20	2	24	116	165	103	69	45	16	8	1	1	1	1
Putnam.....	35	35	35	34	19	34	40	42	43	23	32	34	7	38	186	238	148	107	52	22	10	2	3	3	1
Randolph.....	48	44	55	51	42	57	48	48	47	49	50	31	14	63	277	305	183	179	64	20	15	2	4	4	1
Ripley.....	26	29	24	21	29	28	19	32	32	30	31	33	4	26	123	169	137	113	52	25	17	1	1	1	1
Rush.....	23	33	38	27	29	36	39	43	26	33	31	37	7	45	180	232	153	97	36	11	7	1	1	1	1
Scott.....	9	15	6	17	15	17	12	15	14	14	14	11	.....	17	61	78	61	57	29	7	6	1	2	2	1
Shelby.....	38	48	46	41	51	48	45	48	50	46	43	43	12	62	262	317	197	151	68	21	8	1	4	4	1
Spencer.....	26	26	25	32	28	30	30	26	41	30	42	43	2	33	155	196	141	127	60	22	19	1	1	1	1
Starke.....	28	21	21	23	13	23	12	29	21	26	17	25	4	25	103	138	95	80	47	15	7	1	1	1	1
Steeben.....	19	24	18	23	15	23	20	24	18	26	18	25	2	19	118	146	92	81	31	7	9	2	2	1	1
St. Joseph.....	227	185	236	211	200	191	231	240	217	227	190	191	26	211	1,154	1,400	1,084	753	296	99	36	10	10	3	3
Sullivan.....	79	66	82	61	71	70	73	87	78	77	69	69	8	132	411	471	299	223	43	46	17	3	13	2	2
Switzerland.....	11	16	18	14	12	11	23	10	21	20	14	23	5	21	82	107	63	123	34	5	8	2	4	4	1
Tippecanoe.....	64	55	65	43	47	51	86	63	56	56	62	61	1	70	324	388	257	223	99	36	18	1	8	1	1
Tipton.....	33	22	33	34	23	39	41	37	40	34	25	29	3	44	146	222	137	110	45	14	8	1	1	1	1
Union.....	7	142	157	134	122	130	158	163	149	145	151	128	3	161	899	960	686	483	182	91	24	4	10	4	4
Vanderburgh.....	30	60	47	46	27	48	49	40	56	44	33	128	8	43	211	310	219	164	80	29	9	2	1	1	1
Vermillion.....	146	147	148	111	126	120	151	146	134	129	133	155	32	227	804	907	586	453	220	78	34	3	1	8	1

TABLE B—Continued.

COUNTIES.	1914.												GROUPED AGES OF PARENTS.															
													Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		Not Re-ported.	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.		
Wabash.....	55	38	57	46	40	49	56	41	63	44	37	41	18	60	291	328	176	158	69	21	9	.....	2	.....	2	.....		
Warren.....	17	16	21	25	18	24	24	14	28	19	19	19	6	26	111	141	93	67	26	10	7	.....	1	.....	1	.....		
Warrick.....	43	37	40	25	39	24	36	39	39	39	44	28	4	39	192	235	158	141	64	17	11	.....	.....	.....	4	1		
Washington...	40	36	40	18	28	33	33	36	29	41	24	26	5	53	160	198	152	114	50	19	7	.....	4	.....	6	.....		
Wayne.....	65	88	97	65	86	60	73	81	91	78	78	64	14	91	458	526	336	267	96	42	18	.....	1	.....	3	.....		
Wells.....	31	30	29	36	23	44	46	36	31	54	38	29	12	58	220	242	132	109	51	18	9	.....	1	.....	2	.....		
White.....	37	48	46	29	28	30	28	40	41	27	25	38	6	29	161	225	174	144	63	19	11	.....	.....	.....	2	.....		
Whitley.....	24	28	27	33	30	21	30	24	28	29	23	37	9	34	143	190	128	96	39	13	12	.....	1	.....	2	1		
Total.....	5,188	5,002	5,410	4,623	4,819	4,923	5,484	5,471	5,488	5,222	4,862	4,829	951	6,669	28,764	34,421	22,134	17,467	7,737	2,689	1,192	8	125	11	391	67		

TABLE C.

*Plural Births, Illegitimate Births, Stillbirths.*

COUNTIES.	PLURAL BIRTHS—TWINS, 566—TRIPLETS, 3.							
	No.	Sex of Children.		Nationality of Mother.			Color of Mother.	
		Males.	Females.	American.	Foreign.	Not Reported.	White.	Colored.
Adams.....	4	7	1	4			4	
Allen.....	26	30	22	24	2		26	
Bartholomew.....	5	5	5	5			5	
Benton.....	2	4		2			2	
Blackford.....	2	2	2	2			2	
Boone.....	1		2	1			1	
Brown.....								
Carroll.....	2	2	2	2			2	
Cass.....	4	2	6	4			4	
Clark.....	8	8	8	8			6	2
Clay.....	5	4	6	4	1		5	
Clinton.....	2	2	2	2			2	
Crawford.....	3	1	5	3			3	
Daviess.....	4	2	6	4			4	
Dearborn.....	8	7	9	8			8	
Decatur.....	1	2		1			1	
DeKalb.....	5	6	4	4	1		5	
Delaware.....	14	11	18	14			14	
Dubois.....	7	6	8	7			7	
Elkhart.....	11	10	12	11			11	
Fayette.....	4	6	2	4			4	
Floyd.....	4	3	5	4			4	
Fountain.....	1	1	1	1			1	
Franklin.....	5	4	6	5			5	
Fulton.....	3	3	3	3			3	
Gibson.....	3	2	4	3			3	
Grant.....	8	9	7	7	1		7	1
Greene.....	5	3	7	4	1		5	
Hamilton.....	7	8	6	7			7	
Hancock.....	5	6	4	5			5	
Harrison.....	2		4	2			2	
Hendricks.....	3	6		3			3	
Henry.....	3	2	4	3			3	
Howard.....	6	8	4	6			6	
Huntington.....	4	5	3	4			4	
Jackson.....	2	1	3	2			2	
Jasper.....	3	1	5	2	1		3	
Jay.....	8	8	8	8			8	
Jefferson.....	3	3	3	3			2	1
Jennings.....	5	6	4	5			5	
Johnson.....	2	3	1	2			2	
Knox.....	10	10	10	10			10	
Kosciusko.....	3	5	1	3			3	
Lagrange.....	5	3	7	5			5	
Lake.....	33	30	36	10	23		33	
Laporte.....	11	11	11	8	3		11	
Lawrence.....	6	5	7	5	1		6	
Madison.....	14	15	13	14			14	
Marion.....	50	55	45	44	6		44	6
Marshall.....	5	6	4	5			5	
Martin.....	6	8	4	6			6	
Miami.....	9	7	11	9			9	
Monroe.....	9	8	10	9			9	
Montgomery.....	4	5	3	4			4	
Morgan.....	5	5	5	5			5	



TABLE C—Continued.

COUNTIES.	PLURAL BIRTHS—TWINS, 566—TRIPLETS, 3.							
	No.	Sex of Children.		Nationality of Mother.			Color of Mother.	
		Males.	Females.	American.	Foreign.	Not Reported.	White.	Colored
Newton.....	2	4	.....	2	.....	.....	2	.....
Noble.....	2	3	1	2	.....	.....	2	.....
Ohio.....	.....	.....	.....	.....	.....	.....	.....	.....
Orange.....	2	1	3	2	.....	.....	2	.....
Owen.....	2	2	2	2	.....	.....	2	.....
Parke.....	8	9	7	8	.....	.....	8	.....
Perry.....	2	.....	4	2	.....	.....	2	.....
Pike.....	3	4	3	3	.....	.....	3	.....
Porter.....	10	10	10	7	3	.....	10	.....
Posey.....	6	8	4	6	.....	.....	5	1
Pulaski.....	3	4	2	3	.....	.....	3	.....
Putnam.....	1	2	.....	1	.....	.....	1	.....
Randolph.....	6	9	3	6	.....	.....	6	.....
Ripley.....	7	9	5	7	.....	.....	7	.....
Rush.....	8	11	5	8	.....	.....	8	.....
Scott.....	.....	.....	.....	.....	.....	.....	.....	.....
Shelby.....	5	3	7	5	.....	.....	5	.....
Spencer.....	6	6	6	6	.....	.....	6	.....
Starke.....	3	2	4	2	1	.....	3	.....
Steuben.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Joseph.....	19	25	13	12	7	.....	19	.....
Sullivan.....	7	8	6	7	.....	.....	7	.....
Switzerland.....	3	4	2	3	.....	.....	3	.....
Tippecanoe.....	12	9	15	11	1	.....	12	.....
Tipton.....	3	6	.....	3	.....	.....	3	.....
Union.....	2	4	.....	2	.....	.....	2	.....
Vanderburgh.....	15	19	11	15	.....	.....	14	1
Vermillion.....	4	5	3	3	1	.....	4	.....
Vigo.....	21	24	18	18	3	.....	21	.....
Wabash.....	4	4	4	4	.....	.....	4	.....
Warren.....	2	3	1	2	.....	.....	2	.....
Warrick.....	6	3	9	6	.....	.....	6	.....
Washington.....	3	3	4	3	.....	.....	3	.....
Wayne.....	6	9	3	6	.....	.....	6	.....
Wells.....	4	3	5	4	.....	.....	4	.....
White.....	9	8	10	9	.....	.....	9	.....
Whitley.....	3	3	3	3	.....	.....	3	.....
Total.....	569	599	540	513	56	.....	557	12

TABLE C—Continued.

*Plural Births, Illegitimate Births, Stillbirths.*

COUNTIES.	ILLEGITIMATE BIRTHS.							
	No.	Sex of Children.		Nationality of Mother.			Color of Mother.	
		Males.	Females.	American.	Foreign.	Not Reported.	White.	Colored.
Adams.....	6	6		6			6	
Allen.....	37	24	13	35	1	1	36	1
Bartholomew.....	4	3	1	4			3	1
Benton.....	2	2		2			2	
Blackford.....	3	2	1	3			3	
Boone.....	3	2	1	3			3	
Brown.....	9	4	5	9			9	
Carroll.....	7	4	3	7			7	
Cass.....	6	4	2	6			6	
Clark.....	9	4	5	9			4	5
Clay.....	8	3	5	8			8	
Clinton.....	7	4	3	7			7	
Crawford.....	2	1	1	2			2	
Davies.....	8	3	5	8			8	
Dearborn.....	1		1	1			1	
Decatur.....	6	4	2	6			6	
Dekalb.....	4	1	3	4			4	
Delaware.....	10	5	5	10			10	
Dubois.....	3		3	3			3	
Elkhart.....	11	7	4	11			11	
Fayette.....	6	5	1	6			6	
Floyd.....	13	1	12	13			7	6
Fountain.....	9	2	7	9			9	
Franklin.....	5	1	4	5			5	
Fulton.....	5	1	4	5			5	
Gibson.....	19	9	10	19			19	
Grant.....	18	9	9	18			13	5
Greene.....	9	3	6	9			9	
Hamilton.....	5	4	1	5			5	
Hancock.....	4	4		4			4	
Harrison.....	8	5	3	8			8	
Hendricks.....	2	1	1	2			2	
Henry.....	9	6	3	9			7	2
Howard.....	6	2	4	6			6	
Huntington.....	3	2	1	3			3	
Jackson.....	11	8	3	11			11	
Jasper.....	4	2	2	4			4	
Jay.....	9	6	3	9			9	
Jefferson.....	5	1	4	5			4	1
Jennings.....	5	2	3	5			5	
Johnson.....	5	4	1	5			4	1
Knox.....	18	9	10	18			17	1
Kosciusko.....	5	3	2	5			5	
Lagrange.....	3	1	2	3			3	
Lake.....	41	23	18	19	22		39	2
Laporte.....	9	6	3	7	2		9	
Lawrence.....	9	5	4	9			9	
Madison.....	16	4	12	16			15	1
Marion.....	202	117	85	198	4		137	65
Marshall.....	4	2	2	4			4	
Martin.....	4	2	2	4			4	
Miami.....	5	1	4	5			5	
Monroe.....	16	8	9	16			16	
Montgomery.....	9	2	7	9			9	
Morgan.....	9	7	2	9			9	

TABLE C—Continued.

COUNTIES.	ILLEGITIMATE BIRTHS.							
	No.	Sex of Children.		Nationality of Mother.			Color of Mother.	
		Males.	Females.	American.	Foreign.	Not Reported.	White.	Colored.
Newton.....	2		2	2			2	
Noble.....	3	2	1	3			3	
Ohio.....	1	1		1			1	
Orange.....	4	3	1	4			4	
Owen.....	3	2	1	3			3	
Parke.....	7	6	1	7			7	
Perry.....	8	3	5	8			8	
Pike.....	10	6	5	10			10	
Porter.....	7	2	5	7			7	
Posey.....	8	4	5	8			8	
Pulaski.....	1	1		1			1	
Putnam.....	4	3	1	4			3	1
Randolph.....	5	1	4	5			5	
Ripley.....	2	2		2			2	
Rush.....	3	2	1	3			2	1
Scott.....	3	1	2	3			3	
Shelby.....	9	5	4	9			9	
Sponcer.....	4	3	1	4			2	2
Starke.....	2	1	1	2			2	
Steuben.....	2	1	1	2			2	
St. Joseph.....	23	14	10	19	4		23	
Sullivan.....	13	5	8	11	2		13	
Switzerland.....	1	1	1	1				1
Tippecanoe.....	16	3	13	15	1		14	2
Tipton.....	5	1	4	5			5	
Union.....	1		1	1			1	
Vanderburgh.....	43	24	20	43			32	11
Vermillion.....	3	1	2	3			3	
Vigo.....	35	20	15	34	1		24	11
Wabash.....	8	3	5	8			8	
Warren.....	3	1	2	3			3	
Warrick.....	8	4	4	8			6	2
Washington.....	8	4	4	8			8	
Wayne.....	12	5	7	12			9	3
Wells.....	6	4	2	6			6	
White.....	1		2	1			1	
Whitley.....	4	1	3	4			4	
Total.....	941	494	453	903	37	1	816	125

TABLE C—Continued.

*Plural Births, Illegitimate Births, Stillbirths.*

COUNTIES.	STILLBIRTHS.							
	No.	Sex of Children.		Nationality of Mother.			Color of Mother.	
		Males.	Females.	American.	Foreign.	Not Reported.	White.	Colored.
Adams.....	18	7	11	18			18	
Allen.....	66	42	24	58	7	1	65	1
Bartholomew.....	14	9	5	14			14	
Benton.....	7	5	2	7			7	
Blackford.....	3	2	1	3			3	
Boone.....	17	10	7	17			17	
Brown.....	7	2	5	7			7	
Carroll.....	10	8	2	10			10	
Cass.....	21	8	13	19	2		21	
Clark.....	33	19	14	33			25	8
Clay.....	16	7	9	16			16	
Clinton.....	15	11	4	15			15	
Crawford.....	8	7	1	8			8	
Daviess.....	17	13	4	17			17	
Dearborn.....	8	6	2	8			8	
Decatur.....	11	5	6	11			11	
Dekalb.....	19	14	5	18	1		19	
Delaware.....	52	31	21	51	1		51	1
Dubois.....	16	11	5	16			16	
Elkhart.....	41	20	21	36	5		41	
Fayette.....	6	4	2	6			6	
Floyd.....	27	8	19	26	1		26	1
Fountain.....	12	5	7	12			12	
Franklin.....	8	6	2	8			8	
Fulton.....	15	10	6	15			15	
Gibson.....	34	21	14	34			34	
Grant.....	47	24	23	46	1		42	5
Greene.....	24	13	11	24			24	
Hamilton.....	13	6	7	13			12	1
Hancock.....	15	10	5	14	1		15	
Harrison.....	16	10	6	16			16	
Hendricks.....	9	4	5	9			9	
Henry.....	24	18	6	23	1		23	1
Howard.....	27	12	15	23	4		27	
Huntington.....	20	11	9	20			20	
Jackson.....	18	10	8	18			18	
Jasper.....	12	7	5	10	2		12	
Jay.....	17	11	6	17			17	
Jefferson.....	10	4	6	10			10	
Jennings.....	8	6	2	8			8	
Johnson.....	11	6	5	11			11	
Knox.....	42	27	15	39	3		40	2
Kosciusko.....	21	14	7	20	1		21	
Lagrange.....	8	4	4	8			8	
Lake.....	147	82	65	63	84		147	
Laporte.....	46	27	19	37	9		45	1
Lawrence.....	34	18	16	31	3		33	1
Madison.....	51	35	16	48	3		51	
Marion.....	233	125	108	205	25	3	207	26
Marshall.....	18	11	7	17	1		18	
Martin.....	10	6	4	10			10	
Miami.....	21	13	9	21			21	
Monroe.....	18	10	8	18			18	
Montgomery.....	13	10	3	13			13	
Morgan.....	17	12	5	16	1		17	

TABLE C—Continued.

COUNTIES.	STILLBIRTHS.							
	No.	Sex of Children.		Nationality of Mother.			Color of Mother.	
		Males.	Females.	American.	Foreign.	Not Reported.	White.	Colored.
Newton	6	3	3	6			6	
Noble	21	16	5	21			21	
Ohio	1		1	1			1	
Orange	17	10	8	16	1		16	1
Owen	7	4	3	7			7	
Parke	17	11	6	15	2		17	
Perry	11	6	6	11			11	
Pike	12	7	5	12			12	
Porter	12	6	6	12			12	
Posey	20	13	7	20			19	1
Pulaski	11	6	5	10	1		11	
Putnam	15	7	8	14	1		15	
Randolph	8	3	5	8			8	
Ripley	6	3	3	6			6	
Rush	12	8	4	12			12	
Scott	8	4	4	8			8	
Shelby	26	10	16	26			25	1
Spencer	17	12	5	17			16	1
Starke	9	4	5	5	4		9	
Steuben	10	9	2	10			10	
St. Joseph	83	45	38	59	24		82	1
Sullivan	31	17	14	28	2	1	31	
Switzerland	2	2		2			2	
Tippecanoe	33	17	17	32	1		33	
Tipton	12	6	6	11		1	12	
Union	4	1	3	4			4	
Vanderburgh	63	32	31	63			56	7
Vermillion	10	5	5	8	2		10	
Vigo	55	31	24	50	3	2	49	6
Wabash	22	13	9	21	1		22	
Warren	10	7	3	10			10	
Warrick	18	12	6	18			18	
Washington	9	5	4	9			9	
Wayne	27	15	12	26	1		26	1
Wells	14	8	6	14			14	
White	15	8	8	15			15	
Whitley	13	6	7	13			13	
Total	2,118	1,209	917	1,911	199	8	2,151	67

TABLE D.

*Number of Births and Rates per 1,000 Population by Counties  
for Year 1914.*

COUNTIES.	Number.	Rate.	COUNTIES.	Number.	Rate.
<b>NORTHERN COUNTIES</b> .....	23,790	24.4	<b>CENTRAL COUNTIES—Cont.</b>		
Adams.....	517	23.5	Madison.....	1,391	21.1
Allen.....	2,251	22.7	Marion.....	6,053	21.3
Benton.....	277	21.8	Monroe.....	639	26.4
Blackford.....	394	24.5	Montgomery.....	552	18.3
Carroll.....	362	20.1	Morgan.....	444	20.7
Cass.....	764	20.5	Owen.....	266	18.9
Dekalb.....	512	20.2	Parke.....	464	20.9
Elkhart.....	1,136	22.5	Putnam.....	407	19.8
Fulton.....	398	23.6	Randolph.....	575	19.6
Grant.....	1,095	21.0	Rush.....	393	20.2
Howard.....	759	21.6	Shelby.....	557	20.2
Huntington.....	746	25.5	Tippecanoe.....	730	17.9
Jasper.....	349	26.6	Tipton.....	393	22.3
Jay.....	584	23.3	Union.....	116	18.5
Kosciusko.....	663	23.6	Vermillion.....	541	27.1
Lagrange.....	356	23.5	Vigo.....	1,717	17.9
Lake.....	4,032	38.5	Warren.....	246	24.7
Laporte.....	1,186	24.8	Wayne.....	932	20.6
Marshall.....	520	21.4	<b>SOUTHERN COUNTIES</b> .....	14,550	21.6
Miami.....	669	22.2	Clark.....	527	17.4
Newton.....	208	19.7	Crawford.....	254	21.0
Noble.....	487	19.8	Davies.....	695	25.0
Porter.....	393	18.9	Dearborn.....	387	17.8
Pulaski.....	278	20.8	Dubois.....	540	27.2
Starke.....	260	24.5	Floyd.....	542	17.8
Stauben.....	254	17.6	Gibson.....	649	21.4
St. Joseph.....	2,575	28.0	Greene.....	895	22.7
Wabash.....	571	21.1	Harrison.....	434	21.4
Wells.....	431	19.1	Jackson.....	540	21.8
White.....	426	24.1	Jefferson.....	335	16.3
Whitley.....	337	19.7	Jennings.....	294	20.6
<b>CENTRAL COUNTIES</b> .....	23,549	20.4	Knox.....	1,032	25.1
Bartholomew.....	514	20.5	Lawrence.....	819	25.5
Boone.....	484	19.3	Martin.....	309	23.4
Brown.....	157	19.6	Ohio.....	66	15.2
Clay.....	689	20.8	Orange.....	399	23.0
Clinton.....	581	21.4	Perry.....	442	24.1
Decatur.....	350	18.5	Pike.....	444	22.5
Delaware.....	1,129	21.5	Posey.....	433	19.8
Fayette.....	294	20.0	Ripley.....	341	17.3
Fountain.....	391	18.9	Scott.....	159	18.2
Franklin.....	267	17.4	Spencer.....	385	18.6
Hamilton.....	543	20.0	Sullivan.....	881	25.6
Hancock.....	341	17.9	Switzerland.....	193	19.4
Hendricks.....	397	19.0	Vanderburgh.....	1,728	21.4
Henry.....	594	10.5	Warrick.....	439	19.7
Johnson.....	402	19.5	Washington.....	338	22.2
<b>STATE</b> .....	61,889	22.1	<b>HIGHEST RATE—Lake Co.</b> .....	4,032	38.5
Males.....	32,018	11.4	<b>LOWEST RATE—Ohio Co.</b> .....	66	15.2
Females.....	29,871	10.6			
White.....	60,776				
Colored.....	1,113				

TABLE E.

*Marriages by Months, Color and Nationality, for the Year Ending December 31, 1914.*

COUNTIES.	MONTHS.												Color.		NATIONALITY.						Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	White.	Colored.	American.		Foreign.		Not Reported.		
															Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Altamont	15	12	8	17	9	26	10	10	15	18	15	18	173	17	165	170	8	3	7	173	
Allen	85	63	49	76	88	124	58	59	85	98	90	60	918	17	846	863	87	65	2	935	
Bartholomew	29	17	15	19	10	22	16	15	22	20	26	22	220	4	219	223	5	1		224	
Benton	9	16	1	2	4	7	2	4	1	12	3	9	70	2	68	70	2			70	
Blackford	17	12	9	9	9	13	8	11	11	11	11	18	139	1	138	139	1			139	
Bloomington	24	20	24	18	3	10	12	8	16	22	21	15	193	1	193	193				193	
Brown	6	4	8	4	4	3	4	3	7	4	1	7	51	7	51	51				51	
Carroll	20	12	16	13	10	13	6	9	15	15	13	8	150	5	150	150				150	
Cass	24	28	14	19	13	41	30	24	28	42	30	20	308	5	258	268	36	29	19	313	
Clark	50	42	37	55	43	69	52	51	44	40	41	64	528	66	586	592	8	2		594	
Clay	20	15	20	29	18	34	14	18	22	39	29	36	292	3	288	291	7	4		295	
Clinton	22	32	21	10	9	28	22	21	23	22	27	26	261	2	263	263				263	
Crawford	0	0	15	9	13	4	12	10	9	10	6	15	121	1	121	121				121	
Davies	26	21	22	14	15	10	10	15	20	20	20	22	213	2	215	215				215	
Dearborn	21	16	11	22	12	17	16	9	21	23	25	17	208	2	209	209	1	1		210	
Decatur	15	13	7	4	11	21	9	10	14	26	16	21	167	1	166	167				167	
Dekalb	16	14	22	13	13	24	20	10	19	17	11	15	194	1	189	190	5	4		194	
Delaware	53	32	33	56	33	56	41	27	48	44	45	51	496	23	468	478	35	22	16	519	
Dubois	12	9	11	14	27	20	6	8	19	19	11	6	157	1	157	157				157	
Elkhart	48	34	32	34	25	63	46	40	39	51	38	61	508	3	481	486	25	21	5	511	

Fayette	6	3	9	5	7	18	5	7	6	6	9	86	21	86	86	2	2	2	88
Floyd	40	18	17	19	17	41	24	16	29	27	12	269	20	281	257	7	2	1	289
Fountain	21	15	14	9	28	12	12	19	23	20	16	214	21	213	213	1	1	1	214
Franklin	7	13	5	13	8	5	7	12	7	7	7	97	7	97	97	7	7	7	97
Fulton	9	14	18	11	11	10	7	16	16	14	14	150	7	150	150	7	7	7	150
Gibson	25	12	14	27	15	8	32	21	19	22	19	226	11	232	237	5	5	5	237
Grant	36	44	38	32	34	69	54	48	64	64	60	552	20	568	558	14	14	14	572
Greene	23	25	26	15	20	17	19	28	28	30	30	286	28	287	277	19	9	9	286
Hamilton	22	18	20	17	11	22	15	20	19	25	29	243	9	251	252	1	1	1	252
Hancock	15	19	12	15	14	21	22	12	15	25	25	197	2	195	196	2	1	1	197
Harrison	10	10	17	6	2	13	8	7	5	5	23	112	1	113	113	1	1	1	113
Hendricks	12	8	13	12	14	15	40	14	8	19	1	125	2	127	127	1	1	1	127
Henry	29	18	10	29	15	40	14	8	31	41	27	268	7	257	258	1	1	1	288
Howard	31	26	32	33	20	33	20	29	32	35	32	348	7	341	342	6	5	8	355
Huntington	22	22	17	20	23	20	18	18	20	21	23	304	3	248	250	6	4	4	254
Jackson	13	20	12	20	10	25	13	15	19	22	13	202	202	202	202	17	14	2	202
Jasper	20	13	19	7	6	11	9	11	4	13	11	131	1	172	168	10	9	22	131
Jay	26	13	22	19	11	22	12	13	16	20	27	228	6	211	212	1	1	1	229
Jefferson	23	20	19	15	15	8	15	15	13	18	20	206	5	211	212	1	1	1	212
Jennings	7	7	9	7	9	9	5	10	14	11	12	111	5	115	116	1	1	1	116
Johnson	16	11	8	13	11	14	12	24	25	23	8	173	11	184	184	16	12	8	184
Knott	25	50	3	4	1	33	36	46	42	41	40	446	11	443	447	16	12	8	467
Kosciusko	25	18	12	17	14	28	12	19	21	36	18	297	1	237	246	1	2	2	245
Lagrange	13	8	5	13	11	8	19	8	10	12	13	137	1	125	127	2	2	2	127
Lake	247	193	161	197	209	257	255	208	281	275	231	2,607	71	1,850	1,997	848	681	2	2,678
Laporte	40	50	26	38	47	94	55	65	49	49	42	585	5	431	475	116	91	43	590
Lawrence	27	9	16	35	27	23	12	34	27	25	25	275	4	273	278	16	1	34	270
Madison	46	53	32	50	41	56	39	36	50	54	67	597	10	576	587	31	20	5	607
Marion	204	270	196	295	293	458	275	298	315	373	344	269	3,082	3,293	3,309	288	276	9	3,590
Marshall	16	12	21	23	10	17	10	18	24	23	26	207	3	207	208	3	2	5	210
Martin	7	15	2	8	12	11	5	8	11	6	11	101	101	101	101	1	1	1	101
Miami	28	28	18	31	12	32	11	24	17	42	36	24	303	303	303	303	303	303	303
Monroe	23	15	19	19	20	43	12	20	33	17	34	277	5	281	281	1	1	1	282
Montgomery	15	18	18	18	20	22	12	21	22	37	27	252	4	255	256	1	1	1	256
Morgan	22	12	14	17	15	14	11	17	16	13	24	183	183	182	182	1	1	1	182
Newton	13	8	7	7	2	5	3	3	3	1	12	66	66	65	66	1	1	1	66
Noble	17	13	15	15	9	15	16	16	13	12	17	175	4	171	174	4	1	1	175
Ohio	4	1	3	9	1	3	4	8	4	4	3	40	4	41	41	3	3	3	44
Orange	16	14	13	11	8	11	6	11	13	10	17	170	4	174	174	4	4	4	174
Owen	14	20	19	8	3	7	6	16	11	12	10	142	2	144	144	2	2	2	144



TABLE E—Continued.

COUNTIES.	Months.												Color.		NATIONALITY.						Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.			American.		Foreign.		Not Reported.		
															Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
													White.	Colored.							
Parke.....	13	13	11	15	8	7	3	9	19	9	6	18	130	1	129	128	2	3	.....	.....	131
Perry.....	8	12	10	10	8	15	10	19	11	18	18	12	147	4	151	151	.....	.....	.....	.....	151
Pike.....	18	3	14	13	11	9	18	16	6	10	13	17	147	1	146	147	2	1	.....	.....	148
Porter.....	18	20	21	10	14	27	11	18	23	20	15	19	216	.....	176	171	23	19	17	26	216
Posey.....	28	15	26	23	8	40	28	31	25	5	37	22	291	7	285	287	1	1	2	.....	288
Pulaski.....	12	13	6	6	7	8	2	12	7	13	12	6	104	.....	104	104	.....	.....	.....	.....	104
Putnam.....	18	13	12	18	3	14	8	15	18	19	16	21	175	.....	175	175	.....	.....	.....	.....	175
Randolph.....	29	15	20	14	10	23	14	26	24	15	24	28	242	.....	242	242	.....	.....	.....	.....	242
Ripley.....	6	11	3	19	12	16	7	9	11	7	16	14	131	.....	131	131	.....	.....	.....	.....	131
Rush.....	9	21	13	15	11	16	12	23	13	20	16	21	185	5	190	190	.....	.....	.....	.....	190
Scott.....	3	5	5	7	8	3	3	5	6	5	8	15	73	.....	73	73	.....	.....	.....	.....	73
Shelby.....	20	25	20	21	18	7	5	19	12	27	17	26	210	7	216	217	1	.....	.....	.....	217
Spencer.....	12	20	17	22	23	30	29	22	21	35	25	33	270	19	285	288	4	1	.....	.....	289
Starke.....	10	7	5	4	8	4	10	7	6	6	10	9	86	.....	83	85	3	1	.....	.....	86
Steuben.....	10	8	4	9	8	6	6	10	7	13	12	15	108	.....	108	108	.....	.....	.....	.....	108
St. Joseph.....	71	77	48	51	110	94	80	64	82	84	97	60	910	8	650	694	259	223	.....	.....	918
Sullivan.....	18	19	22	24	18	26	17	23	34	24	30	27	275	7	256	260	26	22	.....	.....	282
Switzerland.....	2	6	4	5	4	4	6	3	3	4	3	8	52	.....	52	52	.....	.....	.....	.....	52
Tippecanoe.....	34	39	28	38	35	53	20	23	45	39	40	42	430	6	415	422	21	14	.....	.....	459
Tipton.....	12	13	15	9	10	19	5	14	12	14	16	28	167	.....	167	167	.....	.....	.....	.....	167
Union.....	2	5	6	1	3	3	.....	4	5	7	2	3	40	1	41	41	.....	.....	.....	.....	41
Vanderburgh.....	92	110	73	67	82	109	72	68	102	126	151	103	1,041	114	1,102	1,101	35	21	18	33	1,155
Vermillion.....	20	6	7	6	11	16	11	16	11	7	10	11	117	1	87	93	30	24	1	1	118
Vigo.....	107	79	83	108	92	102	96	109	91	102	104	114	1,135	51	1,108	1,123	78	63	.....	.....	1,186

Wabash.....	17	16	21	13	15	27	18	26	20	20	21	24	237	1	238	233	.....	.....	.....	238
Warren.....	9	11	4	3	4	15	4	11	10	4	12	8	96	.....	96	95	.....	.....	.....	95
Warrick.....	23	9	16	12	8	13	7	16	11	14	13	14	149	7	156	156	.....	.....	.....	156
Washington.....	11	12	12	9	7	9	10	11	14	7	11	17	130	.....	130	130	.....	.....	.....	130
Wayne.....	39	25	26	28	17	38	22	31	37	30	41	29	339	24	351	354	12	9	.....	363
Wells.....	15	17	14	13	7	13	11	16	17	9	22	16	170	.....	169	170	1	.....	.....	170
White.....	10	21	13	6	17	19	5	15	14	9	13	17	169	.....	159	169	.....	.....	.....	169
Whitley.....	28	3	16	12	11	11	7	9	8	15	9	24	153	.....	153	153	.....	.....	.....	153
Total.....	2,457	2,256	1,960	2,247	2,068	2,971	2,058	2,294	2,583	2,787	2,709	2,589	27,833	1,145	26,672	27,004	2,129	1,701	177	183
																				28,978

TABLE F.  
*Marriages, Grouped Ages, for the Year Ending December 31, 1914.*

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Total.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Adams.....	3	36	135	112	22	14	6	6	3	5	2	2	1	1	1	1	2	1	173
Allen.....	10	135	618	599	154	131	79	39	30	25	9	3	2	2	1	2	1	2	935
Bartholomew.....	11	58	162	123	32	29	17	9	9	4	1	1	1	2	1	1	1	1	224
Benton.....	13	49	46	13	7	5	4	4	1	1	2	2	2	2	2	2	2	2	70
Blackford.....	14	59	98	55	9	12	5	4	6	7	5	2	2	2	2	2	2	2	139
Boone.....	12	48	137	111	22	16	16	13	3	3	4	2	2	2	2	2	2	2	193
Brown.....	17	26	19	12	4	3	3	3	5	5	4	2	2	2	1	1	1	1	51
Carroll.....	11	49	108	83	18	13	5	3	4	4	4	2	2	2	1	1	2	1	150
Cass.....	3	64	205	186	35	23	14	15	16	12	6	2	2	2	2	2	2	2	313
Clark.....	14	254	448	261	84	61	34	16	11	2	3	2	2	2	2	2	2	2	594
Clay.....	7	63	203	176	47	31	17	14	14	9	6	2	1	1	1	1	1	1	295
Cinton.....	8	64	180	158	42	21	20	13	6	2	6	3	2	2	2	2	2	2	263
Crawford.....	9	47	91	62	12	7	4	2	3	3	2	2	2	1	1	1	1	1	121
Davies.....	14	80	166	109	21	16	9	7	2	1	2	2	3	1	1	1	1	1	215
Dearborn.....	5	31	135	141	49	25	16	3	2	2	1	2	3	2	2	2	2	2	210
Deatur.....	4	44	111	91	26	14	11	9	10	6	3	2	1	1	1	1	1	1	167
DeKalb.....	3	50	137	115	30	16	12	11	8	12	3	2	2	2	2	2	2	2	164
Delaware.....	32	179	345	253	91	47	27	22	19	12	3	2	2	2	2	2	2	2	519
Dubois.....	4	22	106	109	33	18	11	4	2	2	1	1	1	1	1	1	1	1	167
Elkhart.....	24	162	362	265	69	40	30	25	21	11	12	8	3	3	3	3	3	3	511

3	24	60	53	19	39	5	1	5	4	1	1	3	3	88
8	46	182	158	47	30	32	17	17	5	6	4	3	2	930
9	60	142	116	30	14	18	12	7	9	6	3	4	3	820
10	74	158	140	27	16	2	3	3	3	2	2	4	3	214
2	30	103	81	24	15	7	8	6	3	4	2	4	2	107
10	61	172	142	37	25	9	3	6	5	1	1	2	2	150
22	162	369	261	91	65	49	35	19	17	12	10	6	2	327
13	91	294	156	47	24	9	5	8	6	2	1	1	1	572
21	71	176	141	26	20	13	9	8	9	6	2	1	1	286
11	59	134	99	21	13	9	9	9	6	5	6	2	1	232
5	24	75	75	14	8	4	5	1	1	1	1	1	2	197
4	33	85	69	20	13	8	5	4	5	1	1	1	2	113
22	84	180	149	38	27	25	15	14	9	6	3	1	1	127
22	130	238	161	45	37	29	13	11	10	7	3	3	1	238
14	72	165	137	40	17	16	16	14	8	2	4	3	1	354
4	50	132	105	36	30	16	13	6	4	4	4	2	1	202
3	28	88	89	25	17	8	5	2	1	4	1	1	1	131
5	64	161	130	35	14	16	10	6	6	5	4	1	1	229
7	65	146	119	38	14	11	8	4	4	3	2	3	1	212
2	25	73	65	18	11	12	6	5	7	3	3	3	2	116
5	48	125	107	34	16	5	4	7	7	4	1	3	1	184
34	175	283	197	71	58	39	21	22	16	6	3	1	2	467
7	66	181	145	26	18	18	8	8	7	6	3	1	1	248
9	53	86	58	17	5	4	2	2	6	1	2	2	1	127
15	557	1,649	1,503	665	433	250	139	74	32	16	6	5	2	2,678
17	166	401	316	110	74	40	22	14	9	2	3	3	3	580
33	144	185	144	32	12	12	9	13	6	4	1	1	3	279
22	216	331	271	83	62	36	27	24	20	18	10	1	1	607
299	562	1,466	1,417	946	547	507	174	104	48	43	11	9	3	3,580
3	44	147	124	30	21	16	10	5	6	7	2	1	1	210
4	29	72	59	13	7	2	3	5	3	4	4	1	1	101
10	63	212	184	45	30	18	16	9	5	6	5	3	3	303
17	89	196	146	43	34	12	4	8	7	4	1	2	1	282
7	57	187	155	33	22	13	10	5	8	5	4	3	1	256
13	80	124	77	23	13	11	5	3	1	5	5	3	1	182
4	21	45	37	8	2	6	5	2	1	1	1	1	1	66
8	62	131	93	24	10	5	8	6	2	1	1	1	1	175
2	9	31	27	6	5	3	2	2	2	1	1	1	1	44
10	50	103	92	35	15	14	9	3	7	8	1	4	3	174
15	49	83	68	25	11	4	5	7	6	5	2	2	3	144

TABLE F—Continued.

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Total.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.			
Parke.....	7	41	95	74	18	11	8	4	2	2	1	1	1	1	1	1	1	131	
Perry.....	8	49	96	78	28	17	12	5	5	5	1	1	1	1	1	1	1	151	
Pike.....	9	50	111	80	12	8	9	5	5	5	1	1	1	1	1	1	1	148	
Porter.....	6	35	135	141	46	30	22	7	7	7	3	5	1	1	1	1	1	216	
Posey.....	6	81	200	162	47	29	19	7	8	8	5	1	1	1	1	1	1	288	
Pulaski.....	4	34	78	56	12	9	4	2	2	3	3	3	1	1	1	1	1	104	
Putnam.....	10	62	117	79	23	17	9	10	8	3	3	4	3	1	1	1	1	176	
Randolph.....	17	70	158	120	26	24	16	15	13	8	5	4	7	1	1	1	1	242	
Ripley.....	3	23	87	79	18	18	16	6	1	3	4	2	2	1	1	1	1	131	
Rush.....	4	61	149	108	22	12	10	7	4	1	1	1	1	1	1	1	1	190	
Scott.....	3	18	49	41	9	4	5	2	4	4	3	1	1	1	1	1	3	73	
Shelby.....	17	65	133	109	38	27	18	12	6	3	4	1	1	1	1	1	1	217	
Spencer.....	16	140	213	120	38	16	13	9	6	4	2	1	1	1	1	1	1	289	
Starke.....	3	24	68	56	8	2	3	2	2	1	1	1	1	1	1	1	1	96	
Steuben.....	17	68	66	66	23	8	6	8	3	8	4	1	1	1	1	1	1	108	
St. Joseph.....	14	190	630	569	167	96	65	34	30	25	10	4	2	2	2	2	2	918	
Sullivan.....	9	99	207	149	41	19	11	7	11	7	2	1	1	1	1	1	1	282	
Switzerland.....	1	10	40	36	4	3	3	6	3	3	1	1	1	1	1	1	1	82	
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Tipton.....	6	44	119	96	18	11	14	9	7	5	3	1	1	1	1	1	1	167	
Union.....	10	32	8	4	2	4	2	1	1	1	1	1	1	1	1	1	3	41	
Vanderburgh.....	11	217	796	758	209	121	78	36	42	12	8	6	5	1	1	1	5	3	
Vermillion.....	10	42	77	58	22	13	4	3	4	2	1	1	1	1	1	1	1	118	
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Warrick.....	21	73	100	67	20	7	6	4	6	4	2	2	..	..	..	..	156
Washington.....	6	40	94	70	20	14	5	4	3	..	1	2	1	..	..	..	130
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Whitley.....	3	28	114	108	23	7	3	4	4	5	6	1	..	..	..	..	163
Total.....	1,218	7,426	18,485	15,367	5,378	3,617	2,254	1,562	988	671	439	220	168	42	14	1	52,28,978



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INDIANA STATE BOARD OF HEALTH

NINTH ANNUAL REPORT

Bacteriological and Pathological  
Laboratory

OF THE

LABORATORY OF HYGIENE

FOR THE

YEAR ENDING SEPTEMBER 30, 1914

---

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INDIANAPOLIS:

WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING  
1915

## LABORATORY STAFF.

---

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HERVEY M. HOOKER, Clerk and Stenographer.

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ROBERT P. JOHNSON, Technical Assistant.

GEORGE KING, Assistant.

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# NINTH ANNUAL REPORT OF THE DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY OF THE INDIANA STATE BOARD OF HEALTH.

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## INTRODUCTION.

The growth of the work of the year ending September thirtieth, nineteen hundred and fourteen, has been a healthy one along all lines; however, there has been no extraordinary increase in any one line of work. In spite of the establishment of local laboratories in different parts of the State, our work has continued to increase in amount. Altogether about twenty-two thousand specimens were examined.

There has been a steady demand for typhoid vaccine from all over the State. About ten thousand doses were sent out.

More than two hundred persons have received the Pasteur treatment to prevent rabies.

The large number of specimens examined, the typhoid vaccine prepared and sent out, the twelve thousand tubes of Loeffler's blood serum made and the thirty thousand outfits made up and sent out have necessitated a large working force and diligent labor to accomplish the work demanded of us.

In order to make this report as valuable as possible each separate kind of specimen examined has been arranged according to counties from which they came, to monthly positive and negatives for nineteen hundred and fourteen and for the previous seven years of the laboratory and to the percentage positive for all previous years of the laboratory. This method of reporting the work of the laboratory gives us information as to the source of our specimens, their character and a comparison of the results of this year's work with that of previous years.

The sputum, diphtheria, typhoid, pus, blood, rabies and pathological specimens have been arranged in this manner in the present report.

Detailed information is given concerning the persons receiving the Pasteur treatment as to county, residence, name, age, sex, kind and location of bites, kind of animal that did the biting, the virus used for treatment and the result of treatment in each case. This data is followed by articles on paralysis occurring during and following the antirabic treatment.

A study of the typhoid epidemic at Decatur due to milk follows. We have thought it a good plan to give the report of Neufeld as a sequel to our study of the epidemiology of typhoid in Indiana. The report closes with the results of a rat survey in Indianapolis.

Table 1, summarizes the work of the laboratory for the last nine years. Each year shows an increase in the number and kinds of examinations done. Beginning with an average of seven specimens examined each day in nineteen hundred and six the number has increased to seventy per day this year, that is to say, the laboratory is doing ten times as much this year as it did in the first year. During the first year only examinations of sputum for tubercle bacilli, swabs for diphtheria, and blood for typhoid were made. Now, in addition to these, blood is examined for malaria, for leukemia or anaemia, blood counts are made, pus is examined for gonococci, urine examined both chemically and microscopically, feces examined for typhoid bacilli, hook worm and other parasites, pathological tissues examined for malignancy and brains for rabies.

TABLE 1.  
*Summarizing Routine Examinations for Nine Years.*

Year.	Sputum.	Diphtheria.	Typhoid.	Malaria.	Patho- logical Tissues.	Rabies.	Gonorrhea.	Miscellaneous.	Total.	Average Per Day.
1906.....	1,503	171	490	45	.....	.....	.....	66	2,239	7
1907.....	2,116	633	802	167	166	82	178	395	3,991	12
1908.....	3,136	2,779	1,270	194	187	144	349	310	8,087	26
1909.....	3,438	1,445	1,508	189	309	134	430	666	7,951	25
1910.....	3,583	1,638	1,404	203	415	243	534	1,099	8,786	28
1911.....	4,228	2,452	2,038	200	714	314	587	1,029	11,142	35
1912.....	4,688	9,377	1,850	200	435	328	542	546	18,276	68
1913.....	4,764	15,792	2,264	155	365	311	691	803	25,372	81
1914.....	4,947	11,064	2,751	139	.....	.....	.....	1,024	21,292	70



Table 2, shows the total number of specimens examined each month during nineteen hundred and fourteen. The average per month during the whole year is 1,774. During April, May and June the work is lightest; during October, November and December the work is the heaviest. The number of specimens of sputum examined each month is about the same. Widal examinations are most numerous during July, August and September. Diphtheria examinations are most numerous during October, November and December.

TABLE 2.

*Sowing Number of Examinations Each Month.*

Month.	Number of Specimens.
October .....	2,581
November .....	3,353
December .....	1,567
January .....	1,641
February .....	2,707
March .....	1,729
April .....	1,031
May .....	952
June .....	1,162
July .....	1,134
August .....	1,392
September .....	2,069
Total .....	21,292

Table 3, shows the number, kind and results of examinations made during 1914.

TABLE 3.

*Showing Number, Kind and Result of Specimens Examined.*

KIND OF SPECIMEN.	Result of Examination.		
	Positive.	Negative.	Total.
Sputum for tubercle bacilli .....	1,255	3,792	4,947
Blood for widal typhoid .....	342	1,265	1,603
Blood for widal paratyphoid .....	26	1,129	1,148
Blood for malaria .....	10	129	139
Throat cultures for diphtheria bacilli .....	1,986	3,358	5,314
Epidemic diphtherias .....	500	5,255	5,750
Pus for gonococci .....	276	421	691
Pathological tissues .....			366
Brains for rabies .....	198	113	311
Pleural fluid for tubercle bacilli .....		12	12
Abdominal fluid for tubercle bacilli .....		2	2
Cerebro-spinal fluid for tubercle bacilli .....	2	25	27
Feces for tubercle bacilli .....	2	12	14
Pus for tubercle bacilli .....	3	58	61
Urine for tubercle bacilli .....	3	21	27
Urine miscellaneous .....			363
Feces for typhoid bacilli .....	1	39	30
Miscellaneous .....			1,186

Indianapolis is splendidly located for transportation of specimens to the laboratory. The difficulty that many States have of getting their specimens is not present in Indiana. Other States meet this transportation difficulty by having branch laboratories in addition to the central laboratory.

#### ANALYTICAL STUDY OF THE GEOGRAPHICAL DISTRIBUTION OF SPECIMENS EXAMINED.

Tables 4, 5, 6 and 7 show the number of sputum, diphtheria and Widal specimens examined for each county in the State. The State is divided into three sanitary sections—northern, central and southern. Each sanitary section is divided into tiers, each tier running from west to east clear across the State.

In addition to the above data the number of specimens examined for each 10,000 inhabitants in the county is also given. The total number of physicians for each county and the number per 10,000 inhabitants is also given.

It will be seen that the number of specimens per 10,000 inhabitants of a county varies directly as the distance from the laboratory. One of the modifying conditions is the number of doctors. It seems that the more numerous the doctors in any county, the greater the number of specimens sent in. This is probably due to the greater competition among physicians which makes them quick to take every advantage of every means to improve their diagnosis. This, however, is modified by large cities and means of direct transportation to the laboratory. The number of Widal specimens is most affected by distance, the diphtheria specimens next and the sputum specimens least.

Economic conditions no doubt influence the distribution of physicians in any given community. It can be stated that on the average each community always contains the maximum number of physicians that can gain a living there. In fact, each community is supersaturated, due to the fact that each community is receiving new physicians each year who leave within a year or two if they cannot make a living. Contrary to what might be expected the presence of local laboratories does not lessen materially the total number of specimens examined by the State Laboratory. It is hoped that each county and large city will establish its own laboratory and that the central laboratory can do consultation work with the local laboratories and devote its time largely to research work. We believe that these charts show that there will be an increase in the amount of routine work demanded of the State labo-

ratory instead of a decrease. However, these tabulations do show that the laboratory now meets in some respects the needs of every part of the State better than a branch laboratory could meet the needs of that particular part of the State in which it might be situated.

TABLE 4.

NORTHERN SANITARY SECTION.	Population.	Tuber- culosis.	Diphtheria.	Widal.	Specimens Per County.	Specimens Examined Per 10,000.	Total Number Physi-ans.	Physicians Per 10,000.
<i>First Tier.....</i>	<i>344,688</i>	<i>460</i>	<i>715</i>	<i>74</i>	<i>1,249</i>	<i>36</i>	<i>470</i>	<i>11</i>
Lake.....	104,763	47	61	6	114	11	127	12
Porter.....	20,750	22	47	12	81	39	23	11
Laporte.....	47,229	21	114	12	147	31	68	14
St. Joseph.....	91,941	199	135	11	345	37	112	12
Elkhart.....	50,445	103	353	25	481	96	88	18
Lagrange.....	15,148	62	5	2	69	46	22	15
Steuben.....	14,412	6	.....	6	6	43	35	15
<i>Second Tier.....</i>	<i>292,532</i>	<i>363</i>	<i>282</i>	<i>105</i>	<i>750</i>	<i>27</i>	<i>492</i>	<i>18</i>
Newton.....	10,519	6	8	2	16	16	21	21
Jasper.....	13,083	15	7	1	23	18	13	10
Pulaski.....	13,312	45	2	1	48	37	16	12
Starke.....	10,696	25	2	2	29	29	12	12
Marshall.....	24,229	83	69	29	181	75	35	15
Fulton.....	16,879	27	10	9	46	27	25	15
Kosciusko.....	28,068	43	38	23	104	37	65	23
Noble.....	24,495	36	17	13	66	27	35	14
Whitley.....	17,033	19	49	1	69	41	25	15
Allen.....	99,029	30	3	17	50	50	170	17
Dekalb.....	25,279	34	77	7	118	47	40	16
<i>Third Tier.....</i>	<i>344,484</i>	<i>697</i>	<i>597</i>	<i>162</i>	<i>1,356</i>	<i>39</i>	<i>625</i>	<i>18</i>
Benton.....	12,688	20	3	7	30	24	23	18
White.....	17,620	22	4	18	44	25	35	20
Cass.....	37,220	63	52	82	207	55	75	20
Carroll.....	17,976	11	1	13	25	11	42	23
Miami.....	30,082	79	125	14	216	71	60	20
Howard.....	35,097	66	48	22	136	39	70	20
Wabash.....	26,944	64	27	15	106	39	47	17
Grant.....	52,032	117	336	29	482	92	90	17
Huntington.....	29,216	67	27	12	106	37	45	15
Wells.....	22,568	42	3	6	57	23	37	16
Blackford.....	16,045	25	81	6	112	70	25	16
Adams.....	21,936	21	10	17	48	22	27	12
Jay.....	25,060	101	82	11	194	77	45	18
Total North- ern Sanitary Section.....	971,804	1,520	1,594	341	3,455	34	1,587	16

TABLE 5.

CENTRAL SANITARY SECTION.	Population.	Tuber- culosis.	Diphtheria.	Widal.	Specimens Per County.	Specimens Examined Per 10,000.	Total Number Physicians.	Physicians Per 10,000.
<i>Fourth Tier</i> ....	291,387	614	819	220	1,653	57	644	22
Warren.....	10,899	20	7	5	32	29	22	20
Fountain.....	20,571	50	36	13	99	48	40	16
Tippecanoe.....	40,651	62	34	43	139	34	82	20
Clinton.....	27,133	58	47	9	114	42	55	20
Tipton.....	17,552	40	19	26	85	48	29	16
Hamilton.....	27,110	74	92	30	196	72	60	22
Madison.....	65,914	151	253	49	453	69	110	17
Delaware.....	52,332	117	168	17	302	58	197	38
Randolph.....	29,325	42	163	26	233	79	49	17
<i>Fifth Tier</i> ....	516,695	1,286	924	471	2,681	52	1,323	26
Vermillion.....	19,948	32	34	13	79	40	49	20
Parke.....	22,214	20	47	6	73	33	35	16
Montgomery.....	30,120	76	81	12	169	56	90	30
Putnam.....	30,556	28	68	4	100	49	35	17
Boone.....	24,973	66	42	11	119	48	50	20
Hendricks.....	20,840	50	140	19	209	103	45	22
Marion.....	283,461	775	353	260	1,288	45	813	29
Hancock.....	19,030	49	27	5	81	43	40	21
Henry.....	30,362	82	63	54	199	66	90	26
Wayne.....	45,191	108	69	87	264	58	65	19
<i>Sixth Tier</i> ....	344,094	627	756	185	1,566	45	575	17
Vigo.....	95,667	116	97	42	155	16	140	15
Clay.....	33,066	73	44	4	121	37	47	14
Owen.....	14,053	26	3	4	33	24	25	18
Morgan.....	21,398	57	64	5	126	47	45	21
Monroe.....	24,191	52	135	25	212	87	30	12
Johnson.....	20,540	63	97	13	173	84	42	20
Brown.....	7,975						7	9
Shelby.....	27,501	48	117	14	179	65	50	18
Bartholomew.....	25,017	38	59	9	96	38	47	19
Rush.....	19,463	47	22	31	100	51	38	20
Decatur.....	18,907	40	50	20	110	58	45	24
Fayette.....	14,691	47	10	6	63	43	28	19
Union.....	6,260	12	17	2	21	33	11	16
Franklin.....	15,335	17	41	10	68	44	20	13
Total Central Sanitary Section.....	152,176	2,527	2,499	876	5,902	51	2,542	22

TABLE 6.

SOUTHERN SANITARY SECTION.	Population.	Tuber- culosis.	Diphtheria.	Widal.	Specimens Per County.	Specimens Examined Per 10,000.	Total Number Physicians.	Physicians Per 10,000.
<i>Seventh Tier....</i>	199,277	354	251	104	709	36	261	13
Sullivan.....	34,368	25	3	15	43	12	50	14
Greene.....	32,375	75	59	20	154	39	45	11
Martin.....	13,181	25	17	1	43	33	15	11
Lawrence.....	32,062	94	73	29	196	61	40	12
Jackson.....	24,727	40	18	7	65	26	40	16
Jennings.....	14,230	20	4	8	32	28	20	14
Rinley.....	19,680	19	26	7	52	26	33	17
Dearborn.....	21,624	56	41	17	114	42	18	8
<i>Eighth Tier....</i>	216,801	296	190	100	586	27	360	17
Knov.....	41,082	49	41	20	140	34	72	13
Gibson.....	30,257	60	20	10	90	30	50	16
Davies.....	27,747	48	13	2	63	23	40	14
Pike.....	19,684	46	43	6	95	48	34	17
Dubois.....	19,843	11	16	3	30	15	33	17
Orange.....	17,201	23	16	14	53	31	35	20
Washington.....	17,445	6	8	.....	14	8	33	19
Scott.....	8,726	16	3	.....	19	21	14	16
Jefferson.....	20,483	32	28	43	103	50	30	15
Ohio.....	4,329	1	1	.....	2	5	6	14
Switzerland.....	9,914	4	1	2	7	7	13	13
<i>Ninth Tier....</i>	256,472	379	175	95	649	17	433	25
Posey.....	21,799	25	84	10	119	44	20	55
Vanderburgh.....	80,630	149	5	36	190	140	17	24
Warrick.....	22,183	14	.....	1	15	41	18	7
Spencer.....	25,676	34	22	25	83	36	17	40
Perry.....	18,282	29	1	7	37	23	13	20
Crawford.....	12,057	12	12	.....	24	20	16	20
Harrison.....	20,232	29	7	5	41	30	15	20
Floyd.....	30,344	73	30	6	109	55	18	36
Clark.....	30,290	24	14	5	43	45	15	34
Total South- ern Sanitary Section.....	672,551	1,029	616	299	1,944	29	1,054	16
Total for State.	2,796,957	.....	.....	.....	.....	38	5,183	18

TABLE 7.

TIER.	Popu- lation.	Tubercu- losis.	Diph- theria.	Widal.	Total Speci- mens.	Speci- mens Exam- ined Per 10,000.	Total Number Physi- cians.	Physi- cians Per 10,000.	Counties.
First.....	344,688	490	715	74	1,249	36	470	11	7
Second.....	232,532	363	282	105	750	27	492	18	11
Third.....	344,484	697	597	162	1,356	39	625	18	13
Fourth.....	291,387	614	819	220	1,653	57	644	22	9
Fifth.....	516,695	1,286	924	471	2,681	52	1,323	26	10
Sixth.....	344,094	627	756	135	1,566	45	575	17	14
Seventh.....	199,277	354	251	107	709	36	261	13	8
Eighth.....	216,801	296	190	100	556	27	360	17	11
Ninth.....	258,473	379	175	95	649	25	423	17	9
Northern Sanitary Sec..	971,804	1,520	1,504	341	3,455	34	1,587	16	31
Central Sanitary Section.	1,152,176	2,827	2,498	876	5,902	51	2,542	22	33
Southern Sanitary Sec..	672,551	1,029	616	299	1,944	29	1,054	16	28
Total for State.....	2,796,531					38	5,185	15	92

TABLE 8.

*London (England) Local Government Board 1911, Bacteriological Examinations.*

COUNTY CLASS.	Total Specimens.	Population.	Specimens Examined Per 10,000 Population.
A.....	37,665	10,749,755	35.
B.....	698	4,175,174	1.7
C.....		5,058,204	
	38,363	19,983,133	1.91

A. Means the counties in which there is a district laboratory or in which the total number of specimens examined is more than 10 per 10,000.

B. Means counties having no district laboratory and in which the number of specimens examined is below 10 per 10,000.

C. Means counties in which none or very little provision is made for the examination of specimens.

## TUBERCULOSIS.

A total of 5,079 sputum specimens were examined of which 1,258 or 25 per cent. were found to contain tubercle bacilli.

For three years the following method has been followed in examining sputum specimens; antiformin is added to the sputum in the proportion of one part antiformin and three parts sputum; this mixture is then shaken on a Rickard sputum shaker for five minutes, then poured into a large 50 c.c. centrifuge tube containing 30 c.c. of water and centrifugated at 3,000 revolutions for ten minutes. The supernatant fluid is poured off by turning the tube quickly upside down. The residue in the tube is then smeared on a large glass slide previously smeared with Meyer's albumin. The slide is then stained with carbol-fuchsin and decolorized with a 20 per cent. solution of HCl and counterstained twice with Loeffler's Methylene blue. This method makes microscopical examinations quick and easy.

There has been some criticism of our method of examination of sputum, e. g., that we failed to find tubercle bacilli in positive specimens. As there are acid fast bacilli in the air that resemble tubercle bacilli, the ordinary Gabbet's blue does not decolorize these pseudo-tubercle bacilli but acid alcohol will. Antiformin will also destroy some of the pseudo-tubercle bacilli. It is likely that only true tubercle bacilli are detected by the antiformin method.

The following method is used for making antiformin:

Sodium carbonate .....	15 grams.
Chloride of lime .....	10 grams.
Sodium hydroxide .....	15 grams.
Water .....	100 c.c.

- (a) Dissolve 15 grams of sodium carbonate to 25 c.c. of water.
- (b) Add 10 grams of chloride of lime to 25 c.c. of water.
- (c) Dissolve 15 grams of NaOH in 50 c.c. of water.
- (d) Add equal parts of supernatant fluid (a and b) to c. Only the best chemicals should be used.

The number of sputum specimens examined for each county is increased where there is a tuberculosis sanitarium. Even with the present wide use of the laboratory only about 25 per cent. of the cases of pulmonary tuberculosis is diagnosed by the State laboratory.

TABLE 8.

*Number of Sputum Specimens Examined for Tubercle Bacilli Each Month, and Result.*

MONTH.	Positive.	Negative.	Total.
October.....	102	262	364
November.....	71	266	337
December.....	94	262	346
January.....	78	332	410
February.....	88	304	392
March.....	108	382	490
April.....	135	378	513
May.....	118	356	474
June.....	146	410	556
July.....	138	299	427
August.....	96	316	412
September.....	91	235	326
Total.....	1,255	3,792	4,047



TABLE 9.

*Showing the Number of Specimens of Sputum Received from Each County.*

COUNTIES.	Positive.	Negative.	Total.	COUNTIES.	Positive.	Negative.	Total.
Adams.....	7	14	21	Lawrence.....	24	70	94
Allen.....	8	21	30	Madison.....	36	115	151
Bartholomew.....	6	22	28	Marion.....	173	602	775
Benton.....	5	15	20	Marshall.....	6	77	83
Blackford.....	7	18	25	Martin.....	9	16	25
Boone.....	11	55	66	Miami.....	14	65	79
Brown.....				Monroe.....	13	39	52
Carroll.....	1	10	11	Montgomery.....	17	53	76
Cass.....	18	45	63	Morgan.....	12	45	57
Clark.....	7	17	24	Newton.....	4	2	6
Clay.....	22	51	73	Noble.....	8	28	36
Clinton.....	15	43	58	Ohio.....	1		1
Crawford.....	2	10	12	Orange.....		16	23
Daviess.....	16	32	48	Owen.....	8	18	26
Dearborn.....	16	40	56	Parke.....	8	12	20
Decatur.....	9	31	40	Perry.....	7	22	29
DeKalb.....	5	20	24	Pike.....	16	30	46
Delaware.....	26	91	117	Porter.....	1	21	22
Dubois.....	6	5	11	Posey.....	6	19	25
Elkhart.....	30	73	103	Pulaski.....	9	29	38
Fayette.....	9	38	47	Putnam.....	9	19	28
Floyd.....	18	55	73	Randolph.....	9	33	42
Fountain.....	11	39	50	Ripley.....	4	15	19
Franklin.....	6	11	17	Rush.....	8	39	47
Fulton.....	10	17	27	Scott.....	2	14	16
Gibson.....	16	44	60	Shelby.....	11	37	48
Grant.....	27	90	117	Spencer.....	11	23	34
Greene.....	14	61	75	Stark.....	9	16	25
Hamilton.....	20	51	71	Steuben.....	4	2	6
Hancock.....	10	30	40	St. Joseph.....	54	145	199
Harrison.....	11	18	29	Sullivan.....	5	20	25
Hendricks.....	13	27	40	Switzerland.....		4	4
Henry.....	28	54	82	Tipton.....	15	47	62
Howard.....	17	49	66	Union.....	12	28	40
Huntington.....	16	51	67	Vanderburgh.....	5	7	12
Jackson.....	6	34	40	Vermillion.....	49	100	149
Jasper.....	4	11	15	Vigo.....	9	23	32
Jay.....	26	75	101	Wabash.....	28	88	116
Jefferson.....	7	25	32	Warren.....	9	55	64
Jennings.....	7	13	20	Warrick.....	6	14	20
Johnson.....	15	48	63	Washington.....	4	10	14
Knox.....	11	38	49	Wayne.....	2	4	6
Kosciusko.....	10	33	43	Wells.....	20	88	108
Lagrange.....	15	47	62	White.....	13	29	42
Lake.....	13	34	47	Whitley.....	3	19	22
Laporte.....	3	18	21		5	14	19
Totals.....	573	1,613	2,216	Totals.....	685	2,178	2,863

TABLE 10.

*Showing Total Number Sputum Specimens Examined Per Month During Last Seven Years.*

MONTH.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average Number Per Month.
January.....	246	276	273	437	381	444	410	376
February.....	208	268	320	435	371	407	392	364
March.....	292	374	458	368	459	367	490	438
April.....	292	315	351	354	462	430	513	440
May.....	308	291	363	391	496	442	474	427
June.....	308	297	383	378	415	412	556	459
July.....	321	302	333	255	407	375	427	375
August.....	264	270	325	274	365	390	412	363
September.....	284	273	271	288	326	276	326	316
October.....	252	295	312	336	382	364	.....	339
November.....	222	290	353	318	357	337	.....	322
December.....	275	261	383	352	401	346	.....	340
Average per month.....	273	293	340	358	395	404	445	378

TABLE 11.

*Showing Per Cent. of Positive Sputum Specimens Per Month During the Last Seven Years, 1908-1914.*

MONTH.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average Per Cent.
January.....	25	33	26	23	25	21	19	22
February.....	29	21	25	28	21	21	22	23
March.....	28	20	23	30	20	19	22	22
April.....	26	23	32	35	20	21	26	26
May.....	28	25	30	40	25	15	25	26
June.....	27	25	31	35	27	24	26	27
July.....	34	33	33	26	28	29	32	31
August.....	20	26	35	26	27	27	23	26
September.....	29	28	35	27	24	27	28	28
October.....	29	29	26	34	25	28	.....	28
November.....	30	28	21	27	21	21	.....	23
December.....	26	30	23	15	19	23	.....	23
Average per month.....	28	26.7	28	28.8	23.7	23	.....	25

Table 12 shows all other specimens examined for tubercle bacilli and the results. This table shows how seldom tubercle bacilli are found in anything but sputum. On serous membranes tubercle bacilli produce serous effusions and not ulcerative processes that contain tubercle bacilli. In bone infections due to tubercle bacilli the pus is mostly due to secondary bacterial infections and the pus usually contains no tubercle bacilli. Feces of normal persons seldom contain tubercle bacilli, but the feces of insane patients often contain the bacilli, because these patients usually swallow their sputum.

Feces of cattle often contain tubercle bacilli when the lungs are infected. The feces and not the udder are the chief source of tubercle bacilli in cows' milk.

TABLE 12.

*Showing Kinds of Specimens Examined for Tubercle Bacilli and Results of Examinations.*

MONTH	Pleural Fluid.		Abdominal Fluid.		Spinal Fluid.		Feces.		Pus.	
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
October.....						2	1		1	
November.....		1							3	
December.....					2		5		8	
January.....						1				
February.....						4	3		7	
March.....		2						1	3	
April.....		3					1	2	3	
May.....		2	2				1		1	
June.....		1							7	
July.....		3				5			4	
August.....						3	1		1	
September.....						10			10	
Total.....		12		2	2	25	2	12	3	58

### TYPHOID FEVER.

Table 13 shows the positive and negative specimens of blood examined for typhoid each month. The remarkable feature is that although August has the largest number of specimens examined, Table 16 shows that September has the highest absolute number of positives and June has the highest percentage of positives. Table 18 shows that the percentage positive for 1914 is the highest since 1908. The standard of examination is the same as that used during the previous five years, e. g., Wilsons's. "All bacilli must be completely immobilized and practically all of them drawn from the edge and collected in large clumps." This rigid standard will eliminate all pseudo-reactions but will also miss some real cases of typhoid.

As a matter of experience it has been found that complete immobility and partial agglutination can be called positive if the clinical symptoms are those of typhoid. It is possible to account for the higher percentage of positives this year in two ways; doctors are sending specimens later in the disease and more frequently from the same case. Formerly only one specimen taken early in the disease was sent in. If the Widal was negative and later the case proved to be typhoid the test was condemned and let go at that.

The mica plate method of sending in blood has been discontinued and Wright capsules are used. When these were first used many of the specimens could not be examined either because the blood had been heated too hot or was insufficient in amount. These difficulties are no longer present because the physicians now know better how to send the specimens in and the capsules are better made than formerly. This capsule method of sending in blood permits more accurate dilution of the blood and gives a greater quantity of serum, so that higher dilutions are possible in differentiating typhoid from paratyphoid.

TABLE 13.

*Showing Number of Specimens of Blood for Widal Reaction Each Month.*

MONTH.	Positive.	Negative.	Total.
October.....	04	145	239
November.....	30	91	121
December.....	9	82	91
January.....	8	64	72
February.....	16	50	65
March.....	18	70	88
April.....	13	55	68
May.....	3	90	93
June.....	7	116	123
July.....	23	155	178
August.....	52	205	257
September.....	66	142	208
Total.....	312	1,265	1,603

TABLE 14.

*Showing Number of Blood Specimens from Each County Examined for  
Widal Reaction.*

COUNTY.	Positive.	Negative.	Total.	COUNTY.	Positive.	Negative.	Total.
Adams.....	7	10	17	Lawrence.....	6	23	29
Allen.....	5	10	15	Madison.....	9	40	49
Bartholomew.....	3	6	9	Marion.....	54	206	260
Benton.....	0	7	7	Marshall.....	8	21	29
Blackford.....	0	6	6	Martin.....	1	0	1
Boone.....	2	9	11	Miami.....	1	13	14
Brown.....	0	0	0	Monroe.....	5	20	25
Carroll.....	1	12	13	Montgomery.....	3	9	12
Cass.....	24	58	82	Morgan.....	1	4	5
Clark.....	2	3	5	Newton.....	1	1	2
Clay.....	1	3	4	Noble.....	4	9	13
Clinton.....	1	8	9	Ohio.....	0	0	0
Crawford.....	0	0	0	Orange.....	0	14	14
Daviess.....	0	2	2	Owen.....	0	4	4
Dearborn.....	3	14	17	Parke.....	0	6	6
Decatur.....	3	17	20	Perry.....	0	7	7
DeKalb.....	3	4	7	Pike.....	1	5	6
Delaware.....	3	14	17	Porter.....	1	11	12
Dubois.....	0	3	3	Posey.....	3	7	10
Elkhart.....	4	21	25	Pulaski.....	0	1	1
Fayette.....	2	4	6	Putnam.....	0	4	4
Floyd.....	1	5	6	Randolph.....	5	23	28
Fountain.....	2	11	13	Ripley.....	2	5	7
Franklin.....	4	6	10	Rush.....	10	20	30
Fulton.....	2	7	9	Scott.....	0	0	0
Gibson.....	2	8	10	Shelby.....	4	10	14
Grant.....	7	22	29	Spencer.....	8	17	25
Greene.....	4	16	20	Starke.....	0	2	2
Hamilton.....	3	27	30	Steuben.....	0	6	6
Hancock.....	0	5	5	St. Joseph.....	2	9	11
Harrison.....	1	4	5	Sullivan.....	6	9	15
Hendricks.....	1	18	19	Switzerland.....	0	2	2
Henry.....	13	41	54	Tippecanoe.....	11	32	43
Howard.....	10	12	22	Tipton.....	6	20	26
Huntington.....	1	11	12	Union.....	0	2	2
Jackson.....	0	7	7	Vanderburgh.....	6	30	36
Jasper.....	0	1	1	Vermillion.....	3	10	13
Jay.....	1	10	11	Vigo.....	12	30	42
Jefferson.....	11	32	43	Wabash.....	0	15	15
Jennings.....	2	6	8	Warren.....	1	4	5
Johnson.....	1	12	13	Warrick.....	1	0	1
Knox.....	4	16	20	Washington.....	0	0	0
Kosciusko.....	6	17	23	Wayne.....	17	70	87
Lagrange.....	0	2	2	Wells.....	3	3	6
Lake.....	0	6	6	White.....	1	17	18
Laporte.....	2	10	12	Whitley.....	0	1	1
Totals.....	142	523	665	Totals.....	196	742	938

TABLE 15.

*Total Number of Blood Specimens for Typhoid Widal, 1906-1914.*

Month.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average Per Month.
January.....	24	47	68	74	63	75	77	47	72	82
February.....	10	58	45	65	66	69	74	45	65	60
March.....	15	40	61	74	94	78	67	33	88	73
April.....	47	45	51	64	78	69	66	73	68	65
May.....	13	21	69	66	92	86	80	110	93	81
June.....	16	27	77	70	81	85	82	75	123	94
July.....	43	84	132	132	128	163	132	191	178	153
August.....	104	126	260	269	294	275	244	303	257	252
September.....	131	143	266	269	328	194	329	280	208	225
October.....	96	116	140	150	217	156	106	239	.....	196
November.....	68	68	159	115	123	115	87	121	.....	114
December.....	28	47	116	65	66	106	65	91	.....	81
Total examinations.....	595	822	1,445	1,413	1,576	1,471	1,489	1,609	1,152	.....

TABLE 16.

*Showing Number of Widal Specimens Positive Per Month, 1900-1914.*

Month.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....	18	30	33	5	1	6	1	4	8	10
February.....	8	35	19	2	1	0	2	4	15	12
March.....	14	8	23	9	5	2	3	1	18	13
April.....	42	17	17	10	5	0	1	1	13	12
May.....	13	5	21	5	10	6	2	11	3	8
June.....	11	8	23	4	8	5	1	8	7	9
July.....	34	31	45	20	11	10	5	33	23	33
August.....	67	13	125	30	39	24	30	64	52	52
September.....	39	30	108	35	55	9	35	75	66	52
October.....	48	48	91	15	24	15	33	94	0	66
November.....	31	41	100	8	10	4	7	30	0	29
December.....	17	28	93	3	4	5	5	9	0	18
Total.....	342	294	698	155	175	80	134	334	209	298

TABLE 17.

*Showing Average Percentage Monthly Positive Widal, 1906-1914.*

Months.	Percentages Positive.
January.....	13
February.....	20
March.....	17
April.....	19
May.....	22
June.....	35
July.....	15
August.....	20
September.....	25
October.....	32
November.....	25
December.....	20

TABLE 18.

*Showing Percentage of Widal Specimens Positive Per Year.*

Years.	Percentage Positive.
1906.....	57
1907.....	35
1908.....	48
1909.....	19
1910.....	11
1911.....	5
1912.....	9
1913.....	17
1914.....	32

**DIPHTHERIA.**

Table 19 shows considerable increase in the total number of diphtheria specimens examined. The doctors are becoming more and more convinced of the necessity of throat cultures for diagnosis.

Most physicians, however, are not obeying the law in that they do not get two consecutive negative reports as to diphtheria bacilli from both the nose and throat before releasing from quarantine. In fact not more than 25 per cent. of cases are even diagnosed by the laboratory. It is for the diagnosis and control of quarantine that local laboratories are most needed.

The total monthly number (shown in Table 19) of specimens and the monthly percentage of positive (as shown in Table 20) show the close relation between the opening of school and the spread of diphtheria and also the necessity of examining every suspicious throat during the first three months of the school year.

TABLE 19.

*Showing Diphtheria Specimens by Months.*

MONTH.	Regular			Epidemic.		
	Positive.	Negative.	Total.	Positive.	Negative.	Total.
October.....	400	587	987	15	522	537
November.....	499	633	1,132	56	377	1,433
December.....	228	539	767	4	163	167
January.....	177	361	538	24	407	435
February.....	183	286	449	178	1,449	1,622
March.....	91	323	414	77	458	530
April.....	42	147	189	2	38	40
May.....	62	113	175			
June.....	23	94	117			
July.....	55	83	138			
August.....	64	90	154	18	80	98
September.....	132	122	254	122	796	888
Total.....	1,986	3,358	5,314	500	5,255	5,750

TABLE 20.

*Showing Average Per Cent. of Diphtherias Positive by Months, 1906-1914.*

Month.	Average Per Cent. Positive.
January .....	28
February .....	34
March .....	25
April .....	25
May .....	34
June .....	28
July .....	38
August .....	36
September .....	49
October .....	38
November .....	37
December .....	31



TABLE 21.

*Showing Number of Throat Cultures Examined by Counties.*

COUNTIES.	Positive.	Negative.	Total.	COUNTIES.	Positive.	Negative.	Total.
Adams.....	1	9	10	Lawrence.....	31	42	73
Allen.....	1	2	3	Madison.....	106	147	253
Bartholomew.....	29	30	59	Marion.....	90	263	353
Benton.....	2	1	3	Marshall.....	29	40	69
Blackford.....	9	72	81	Martin.....	6	11	17
Boone.....	18	24	42	Miami.....	29	94	123
Brown.....	0	0	0	Monroe.....	35	100	135
Carroll.....	0	1	1	Montgomery.....	19	62	81
Cass.....	14	38	52	Morgan.....	38	26	64
Clark.....	5	9	14	Newton.....	1	7	8
Clay.....	20	24	44	Noble.....	5	12	17
Clinton.....	16	31	47	Ohio.....	0	1	1
Crawford.....	7	5	12	Orange.....	7	6	13
Davies.....	7	6	13	Owen.....	2	1	3
Dearborn.....	13	28	41	Parke.....	26	21	47
Decatur.....	12	38	50	Perry.....	0	1	1
DeKalb.....	30	47	77	Pike.....	12	31	43
Delaware.....	38	130	168	Porter.....	9	38	47
Dubois.....	6	10	16	Posey.....	23	61	84
Elkhart.....	131	222	353	Pulaski.....	1	1	2
Fayette.....	3	7	10	Putnam.....	26	42	68
Floyd.....	7	23	30	Randolph.....	78	85	163
Fountain.....	7	29	36	Ripley.....	19	7	26
Franklin.....	14	27	41	Rush.....	8	14	22
Fulton.....	2	8	10	Scott.....	1	2	3
Gibson.....	9	11	20	Shelby.....	42	75	117
Grant.....	87	249	336	Spencer.....	5	17	22
Greene.....	22	37	59	Starke.....	2	0	2
Hamilton.....	31	61	92	Steuben.....	0	0	0
Hancock.....	8	19	27	St. Joseph.....	35	100	135
Harrison.....	1	6	7	Sullivan.....	0	3	3
Hendricks.....	30	119	149	Switzerland.....	0	1	1
Henry.....	11	52	63	Tippecanoe.....	7	27	34
Howard.....	15	33	48	Tipton.....	6	13	19
Huntington.....	8	19	27	Union.....	3	14	17
Jackson.....	6	12	18	Vanderburgh.....	2	3	5
Jasper.....	2	5	7	Vermillion.....	20	14	34
Jay.....	32	50	82	Vigo.....	33	64	97
Jefferson.....	2	26	28	Walsh.....	4	23	27
Jennings.....	2	2	4	Warren.....	3	4	7
Johnson.....	31	66	97	Warrick.....	0	0	0
Knox.....	13	28	41	Washington.....	4	4	8
Kosciusko.....	18	20	38	Wayne.....	22	47	69
Lagrange.....	2	3	5	Wells.....	0	3	3
Lake.....	25	36	61	White.....	0	4	4
Laporte.....	47	67	114	Whitley.....	7	42	49
Totals.....	794	1,733	2,527	Totals.....	796	1,573	2,369

TABLE 22.

*Percentage Positive of Diphtherias, 1906-1914.*

MONTH.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average Per Cent. Per Month.
January.....		30	30	20	34	30	15	11	33	28
February.....		22	57	23	20	25	13	30	41	34
March.....		44	39	22	20	30	9	30	22	25
April.....		40	30	63	5	36	16	16	22	25
May.....		50	50	20	34	33	11	22	35	33
June.....		60	63	26	33	22	13	37	40	28
July.....		74	43	12	26	30	13	36	40	37
August.....		63	0	50	47	24	13	25	42	36
September.....		88	18	50	38	50	32	46	52	40
October.....		70	46	25	26	27	31	40	.....	38
November.....	46	55	27	28	37	20	32	44	.....	39
December.....	50	50	24	30	34	13	30	30	.....	31
Average percent. positive per year.....	48	54	33	30	30	26	19	34	34	.....

TABLE 23.

*Showing Percentage of Diphtherias Positive by Years.*

YEAR.	Regular, Percentage Positive.	Epidemic, Percentage Positive.
1906.....	47	.....
1907.....	54	.....
1908.....	33	.....
1909.....	30	.....
1910.....	30	.....
1911.....	26	.....
1912.....	19	.....
1913.....	30	11
1914.....	37	19

TABLE 24.

*Total Diphtherias, 1906-1914, By Months.*

MONTH.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average Per Month.
January.....		59	99	154	151	209	246	847	538	395
February.....		31	78	113	131	130	237	604	440	310
March.....		45	55	57	214	123	192	274	414	275
April.....		28	46	22	54	87	171	182	189	138
May.....		25	44	40	117	77	207	131	175	133
June.....		25	38	19	68	58	97	127	117	80
July.....		37	19	16	57	80	94	123	138	99
August.....		13	0	58	35	233	109	165	154	121
September.....		43	692	98	92	249	359	336	254	262
October.....		115	965	321	652	2,661	986	987	.....	943
November.....	180	483	451	421	318	2,650	1,251	1,132	.....	974
December.....	63	225	156	315	236	1,204	1,035	767	.....	797
Total.....	213	1,129	2,643	1,224	2,128	6,961	4,514	5,675	2,528	.....

TABLE 25.

*Diphtheria Specimens Found Positive, 1906-1914, By Months.*

Month.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average Per Month.
January.....		18	28	31	32	67	37	169	177	117
February.....		7	45	27	26	33	31	102	183	117
March.....		20	17	15	41	36	17	79	91	61
April.....		11	14	14	3	32	29	29	43	30
May.....		13	22	8	40	25	24	29	62	42
June.....		15	24	5	23	13	13	37	23	23
July.....		27	7	2	15	24	17	45	55	43
August.....		8	0	29	18	57	15	42	64	42
September.....		38	128	49	35	123	123	150	132	114
October.....		80	451	83	175	773	309	430	.....	355
November.....	70	267	125	122	120	520	406	499	.....	365
December.....	30	107	38	96	91	159	332	228	.....	270
Totals.....	100	611	899	481	639	1,867	1,356	1,920	819	.....

**DIPHTHERIA EPIDEMICS AND DIPHTHERIA CARRIERS.**

Practically from the beginning of bacteriological examination of throats it has been found that although diphtheria bacilli were the etiological factors, many persons harbor these bacilli without showing any symptoms of the disease. These last named persons are called diphtheria carriers and are the most important single factor in the spread and persistence of an epidemic of diphtheria.

The following leaflet of instructions and advice is sent to local health officers where there are any school children with diphtheria:

**INDIANA STATE BOARD OF HEALTH.****DIPHTHERIA EPIDEMICS AND DIPHTHERIA CARRIERS.**

Inspection of the throats of school children is at all times important, and in the presence of an epidemic of diphtheria is absolutely necessary. The examination should consist, (1) of an inspection of the throat and nose for clinical signs of disease, and (2) of swabbing the throat to obtain material for making a bacteriological examination to determine if diphtheria bacilli are present. During an epidemic of diphtheria many children have diphtheria bacilli in their throats without showing signs of being sick. These children are called "bacilli carriers", and this fact is an argument for medical inspection of schools.

The Indiana Sanitary Schoolhouse Law, Section 2, commands medical inspection under certain circumstances in the following words:

"Whenever diphtheria, scarlet fever or any other contagious disease breaks out in any school it shall be the duty of the township trustee, school board, school trustee or the school authority or authorities having control, to have medical inspection made of the pupils, and all found in any degree ill shall be sent home and retained there until the local health officer gives a certificate of health,

then such child may again be admitted to school. \* \* \* Any trustee or school authority who fails or neglects to have medical inspection as provided above is liable to a fine of not less than ten nor more than one hundred dollars, and each said refusal or neglect shall constitute a separate offense."

The rule of the Indiana State Board of Health governing quarantine in diphtheria is as follows:

For the patient, quarantine until the secretions from the nose and throat are free from the diphtheria infection as shown by bacteriological examination of such secretions. For children associated with or in the family with the patient, quarantine until death or recovery of the patient and disinfection of person, clothing and premises: Provided, That other children of the family who shall receive an immunizing dose of antitoxin of not less than 1,000 units may be released from quarantine at the discretion of the health officer having jurisdiction, after disinfection of person and clothing. The patient shall be excluded from school until a medical certificate that the nose and throat are free from infection, based upon a bacteriological examination, is furnished. Children associated with the patient shall be excluded from school for seven (7) days after release from quarantine unless a medical certificate of having received an immunizing dose of not less than 1,000 units of antitoxin is furnished. Adult members of the family may be released from quarantine on the condition that they be disinfected in person and apparel and remain away during the quarantine period.

In addition to the rule given above governing quarantine and exclusion from school, the Indiana State Board of Health recommends the following measures for the detection and control of diphtheria carriers during an epidemic of diphtheria in any school:

**MEASURE 1.** Whenever there is an outbreak of diphtheria in any school, the throat and nose of every pupil and teacher and any other person in such school should be inspected and mucus taken on a sterile swab for bacteriological examination.

All children found by inspection to have sore throat or slight or severe cold should be sent home immediately and not allowed to return to school until it is proven by bacteriological examination that they do not have diphtheria bacilli in their throats. Every child not having sore throat or cold should remain at school unless bacteriological examination shows them to be diphtheria "bacilli carriers".

**MEASURE 2.** If the epidemic is extensive, immunizing doses of not less than 1,000 units of diphtheria antitoxin may be given to all well persons and the building disinfected with formaldehyde, according to the rules.

**MEASURE 3.** The diphtheria carrier, rather than the premises should be quarantined. It is not necessary to quarantine members of the family who do not come in direct contact with the carrier. Isolation of the carrier from the rest of the family must be complete, a nurse or attendant being provided. The regular diphtheria quarantine card may be dispensed with, the following card being sufficient:

CARRIER OF DIPHTHERIA HERE.  
KEEP OUT.

**MEASURE 4.** Spray the nose and throat of the diphtheria carrier with an antiseptic such as hydrogen peroxide 5 per cent. solution, Seller's solution or Dobell's solution. These antiseptics may also be used as a gargle. The local application to the throat of 5 per cent. solution of silver nitrate, tincture of iodine or 5 per cent. solution of guaiacol in glycerine are sometimes necessary in persistent cases.

**MEASURE 5.** Schools should not be closed unless the epidemic is widespread or the attendance does not justify continuing them, for it makes the detection of mild cases and carriers of diphtheria very difficult. Children should be forbidden to attend church or visit public amusement places. Social gatherings or parties for children should not be permitted.

The Bacteriological Laboratory of the Indiana State Board of Health is prepared to make bacteriological examination of all swabbings from the nose and throats of children suspected of carrying diphtheria bacilli, and will furnish the necessary outfits, free of charge, upon application.

By following the above recommendations, epidemics of diphtheria may be controlled from the beginning and without interfering with the work of the school.

It is now known that the diphtheria (Klebs-Loeffler) bacillus may remain for a considerable time in the nose and throat of persons who have recovered from diphtheria. In some cases the bacilli have been found for five and seven weeks and in one case on record, for twenty-three weeks after the attack. It is also known that diphtheria bacilli may be found in the throats of persons who do not have and who never have had the disease. This is especially true when diphtheria is prevalent in a community. While the bacilli under such conditions do not produce the disease in the "carrier", when transferred to other persons they may produce diphtheria in a most virulent form. It is certain that diphtheria has been kept alive for months in schools and institutions by means of such "carriers," and it is quite probable that unrecognized carriers with only a "slight sore throat" are the source of more cases of diphtheria than persons having well marked and recognized cases of the disease.

It has been shown by the examination of a large number of cases, that when diphtheria is present in a community, from 5 to 10 per cent. of the persons in that community are bacilli carriers. On account of the greater exposure of children in schools, the proportion of carriers among such children would naturally be higher than among the population in general. The report of the State Laboratory of Hygiene for October, 1912, shows 1,426 cultures taken from the throats of school children in schools where one or more cases of diphtheria had occurred. Of this number, 98 were positive, providing that at least 7 per cent. of the children in these schools were bacilli carriers.

J. N. HURTY, Secretary.

We especially advise health officers and school inspectors to read the latter part of this leaflet. The old method of quarantine for carriers only breeds discontent and opposition so that only isolation for the carrier is advisable. It is absolutely useless to isolate carriers unless some means are taken to rid the carrier of

bacilli. Health boards and school boards should provide medical attention free of charge for all carriers, either as a visiting nurse or health officer or school inspector.

Where diphtheria cases appear in a school after the first culturing of the school, cultures then need only be taken from the room or rooms in which the cases occurred.

In every family where a carrier is detected, all other members of the family should be cultured before excluding them from the isolation imposed on the detected carrier. If in examining the other members of the carrier's family other carriers are detected, and these persons are in school, all other children in their room should also be cultured to detect carriers.

It will take an enormous amount of education to change the viewpoint with regard to persons rather than premises being the source of contagion. It seems that school boards are willing to spend large sums for bad smelling disinfectants but are willing to spend very little for efficient medical inspection of schools. It has been rather conclusively proven that most contagious diseases of children are due to carriers and mild or undetected cases of infectious disease. Thus we see that *efficient medical inspection of schools* is just as valuable to control other infectious diseases of children, as it is to control epidemics of diphtheria.

### EPIDEMIOLOGY OF DIPHTHERIA.

There is no disease that can so well be controlled by laboratory examinations as diphtheria. It is very evident that full advantage of the State Laboratory is not being taken by the physicians in Indiana. During the year 1913 there were 496 deaths and 4,077 cases of diphtheria reported. Of the 5,675 specimens sent in for first diagnosis, only 1,746 were found to be positive. Physicians usually make 42 per cent. of mistakes in their clinical diagnoses "diphtheria" and 47 per cent. of mistakes in their clinical diagnoses "not diphtheria". This leaves a difference of 5 per cent. in favor of "not diphtheria" when the clinical diagnosis is positive; this gives us 3,874 as the probable number of clinical cases of diphtheria. Thus we see that only 42 per cent. of all cases were diagnosed by the laboratory in 1913.

The following chart shows 833 cultures sent in for diagnosis and found positive during the year 1913.

CHART 1.

SANITARY SECTION.	Cultures for Diagnosis, Positive.	Number Cultures for Final Release.			Percentage Negative Release Cultures Examined, Negative.	Percentage of Positive Diagnoses Sent in for Release.	Total Percentage of all Positive Diagnoses Released on Negative Cultures.
		Pos.	Neg.	Total.			
Northern.....	223	17	150	167	90	75	67.5
Central.....	440	50	190	240	79	55	43
Southern.....	170	7	35	42	83	25	21
Total.....	833	74	375	449	84	54	45

In the Northern Sanitary Section only 75 per cent. were sent in for release, of these only 90 per cent. got a final negative, leaving only 67.5 per cent. of cases released on a final negative.

In the Central Sanitary Section only 55 per cent. were sent in for release and of these only 79 per cent. got a final negative, leaving only 43 per cent. of cases released on a final negative.

In the Southern Sanitary Section only 54 per cent. were sent in for release, of these only 83 per cent. got a final negative, leaving only 21 per cent. cases released on a final negative culture.

Of the 833 positive diagnosis cultures sent in, only 54 per cent. of cases were subsequent cultures sent in for release. Thus we see that only 45 per cent. of cases diagnosed positive by the laboratory are released on final negative cultures. We have already seen that only about 42 per cent. of all cases of diphtheria in Indiana are diagnosed by the State Laboratory; of this number only 45 per cent. are released on a final negative culture. Thus we see that in only 19 per cent. of cases is there a legal laboratory control of release from quarantine. Rule 4 (of the Indiana State Board of Health), governing quarantine and exclusion from school reads as follows: "quarantine until the secretions from the nose and throat are free from diphtheria bacilli as shown by bacteriological examination of such secretion". The rule imposed by some boards of health is two consecutive negative cultures from nose and throat 24 hours apart required.

This study shows very plainly why diphtheria is not better controlled in Indiana. Whole time local health officers are certainly needed for the control of diphtheria.

### PARATYPHOID FEVER.

In 1896 paratyphoid fever was differentiated from typhoid by Achard and Bensaude. In 1900 Schottmüller isolated the B. para-

typhoid B. from the blood and feces of a patient with clinical symptoms of typhoid. The blood serum of the patient agglutinated the bacillus found in the blood in a much higher dilution than the B. typhosus.

With the improvement of bacteriological technic many sporadic and epidemic cases of so-called meat poisoning were found to be due to a bacillus found by Gaertner in meat in 1888 and later named B. enteritidis Gaertner, which is in most instances identical with B. paratyphoid B. The B. paratyphoid belongs to a group of bacteria called the paratyphoid or hog cholera group, the bacteria found in typhoid-like diseases in man, in hog cholera, in mouse-typhoid, in dysentery of calves and recently in contagious abortion of mares.

Paratyphoid in man usually runs a mild typhoid-like course, and it is almost impossible to differentiate it clinically from typhoid, except by the Widal reaction. In addition to the typhoid-like group of cases there are others that more generally resemble a severe gastroenteritis. To this group belong the cases due to meat poisoning. A third group of cases begins with constipation and fever of a shorter or longer duration with disturbance of the nervous system, muscular pains and increased heart action.

About 33 per cent. of all cases of paratyphoid resemble typhoid; 10 per cent. resemble the meat poisoning type and 57 per cent. are of the mild intestinal disturbance type.

TABLE 26.

*Showing Number of Specimens of Blood for Paratyphoid Widal Examined Each Month.*

MONTH.	Positive.	Negative.	Total.
October.....	12	227	239
November.....	1	120	121
December.....	0	1	1
January.....	1	0	1
February.....	0	4	4
March.....	0	0	0
April.....	0	0	0
May.....	0	16	16
June.....	1	122	123
July.....	4	174	178
August.....	6	251	257
September.....	1	207	208
Total.....	26	1,132	1,158

Per cent. positive, 2.24.



TABLE 27.  
*Showing Widal Examinations for Typhoid and Paratyphoid.*

MONTH.	Paratyphoid.			Typhoid.		
	Positive.	Negative.	Total.	Positive.	Negative.	Total.
October.....	12	227	239	94	145	239
November.....	1	120	121	30	91	121
December.....	0	1	1	9	82	91
January.....	0	1	1	8	64	72
February.....	0	4	4	15	50	65
March.....	0	0	0	0	0	0
April.....	0	0	0	0	0	0
May.....	0	16	16	3	90	93
June.....	1	122	123	7	116	123
July.....	4	174	178	23	155	178
August.....	6	251	257	52	205	257
September.....	1	207	208	66	142	208
Total.....	28	1,132	1,159	311	1,140	1,448

Positive paratyphoid, 2.24 per cent. Positive typhoid, 21.48 per cent.

This shows that one out of every ten cases of typhoid fever is really due to the B. paratyphoid B. and not the B. typhoid.

TABLE 28.  
*Detailed Information Concerning Eleven Patients Whose Blood Gave a Positive Paratyphoid B. Widal During 1914.*

Patient.	Age.	Sex.	Date of Onset.	Date of Recovery.	Widal Parity.	Temperature.	First Diagnosis.	Final Diagnosis.	Outcome.	Diar- rhoea.	Nose Bleed.	Tympa- nia.	Consti- pation.	Rose Spots.	Spleen Enlarged.	Head- ache.
C. V.	24	M	8-1	8-23	+	102.5	Para. Typhoid	Para.	Recovery.			+++	++			++
M. M.	22	F	10-13	10 days	+	103	Typhoid	Para.	Recovery.			++	+			++
F. F.	21	M	10-13	9 days	+	102	Typhoid	Para.	Recovery.			++	+	++	++	++
J. T.	35	F	10-2	3 weeks	+	102	Typhoid	Typhoid	Recovery.			++	+	++	++	++
H. M.	20	M	10-2	3 weeks	+	103	Para.	Para.	Recovery.	+		++	+	++	++	++
J. P.	33	M	9-2	4 weeks	+	103	Typhoid	Para.	Recovery.	+	+	++	+	++	++	++
N. E.	26	M	8-23	4 weeks	+	102	Typhoid	Typhoid	Recovery.			++	+	++	++	++
P. L.	26	M	8-15	3 weeks	+	102	Typhoid	Inf. Paral.	Recovery.				+	++	++	++
T.	16	M	8-15	3 weeks	+	102	Typhoid	Para.	Recovery.				+	++	++	++
L.	26	F	7-7	17 days	+	102	Typhoid	Mild Typhoid.	Recovery.				+	++	++	++
B.	28	F	9-28	2 days	+	104	Typhoid	Mild Typhoid.	Recovery.		+	+	+	++	++	++

TABLE 29.

*Showing Total Number of Paratyphoid Patients on Which Full Information Was Received.*

Male.	Female.	Age.	Number.	First Diagnosis Number.	Final Diagnosis Number.
7	4	10-15	1	Paratyphoid 2.	Paratyphoid 6.
		16-20	1	Typhoid 9.	Typhoid 2.
		21-30	7		Mild typhoid 2.
		31-40	2		Infantile paralysis 1.

Average duration is 19 days.  
Average highest temperature is 102° F.

TABLE 30.

SYMPTOM.	Present.	Absent.
Diarrhoea.....	2	9
Nose bleed.....	3	8
Tympanitis.....	6	5
Constipation.....	7	4
Rose spots.....	7	4
Hemorrhage.....	0	11
Spleen enlarged.....	7	4
Headache.....	10	1
Total number of patients, 11.	.....	.....

There are many phases of the epidemiology of paratyphoid still unexplained. As in typhoid a great many of the infections are due to contact with paratyphoid or paratyphoid bacilli carriers. In paratyphoid infected food plays a much larger part as the source of infection than in typhoid. So-called ptomain poisoning is practically always due to meat being infected with some member of the paratyphoid group of bacilli. The meat may be infected ante or post mortem, the bacilli circulating in the blood or invading the tissue from the intestine following death. The meat may also be infected post mortem by the feces of the animal or by the hands of the person handling it or the meat may be ground up, cooked and mixed by hand during which time the meat is infected. If the meat is not kept at a low temperature it becomes practically a pure culture of paratyphoid bacilli. An attack of typhoid does not protect against typhoid. Biological tests show that typhoid and paratyphoid are closely related but not indetical.

The results of our Widal tests show that about ten per cent. of all typhoid-like cases are due to B. paratyphoid B. This ten per cent. represent about 33 per cent. of all paratyphoid cases. Thus we see that fully 66½ per cent. of all cases of paratyphoid infection are not diagnosed. It must be urged that clinical symptoms form no basis for judging typhoid or paratyphoid fever.

## PUS FOR GONOCOCCI.

Table 36 shows the results of pus examinations for gonococci 1909-1914, with percentage of positives according to sex. It will be seen that the males give 14 per cent. more positives than females. This is due mainly to the improper method of taking specimens from female patients. Many of the specimens are taken from the vagina or vaginal portion of the cervix, parts which are teeming with all sorts of bacteria, many of which are hard to distinguish from gonococci. Smears should be taken either from the urinary meatus or from the inner portion of the cervix uteri.

The negatives from male patients are mostly from specimens taken after prostatic massage to determine if the patient is cured. The social education for the protection of wives is having some good effect, for many of the specimens are from men who have had a gonococcus infection and wish to marry, the examination being to determine whether they are free from gonococci or not.

TABLE 36.

*Pus Examined for Gonococci, 1909-1914.*

SEX.		1909.	1910.	1911.	1912.	1913.	1914.	Average Per Cent. Positive.
Male.....	(Positive.....	104	102	152	153	122	162	.....
	(Total.....	248	218	299	323	277	315	.....
	(Positive %....	41	47	51	47	44	51	47
Female.....	(Positive.....	40	42	75	83	55	97	.....
	(Total.....	101	196	197	199	221	325	.....
	(Positive %....	40	21	38	42	25	30	33
No Sex.....	(Positive.....		4	12	21	14	17	.....
	(Total.....		16	38	48	44	51	.....
	(Positive %....		25	32	44	32	33	33

## GONORRHEA IN CHILDREN.

Seventeen specimens of pus from children of twelve or under submitted during the past year for the detection of the gonococcus, have proved positive.

One other positive specimen from a girl of 13 is worthy of note as seven members of the family were reported to have gonorrhea.

The ages ranging from eight days to twelve years are as follows: One 8 days, one 2 weeks, one 3 weeks, one 5 weeks (all ophthalmia cases), one 2 years, one 2½ years, two 4 years, three 7 years, one 9 years, one 10 years, two 11 years and one 12 and one in which no age was given.

The sex in eleven cases was female, in four male and in two no sex was given.

Two specimens were obtained from the urethra, nine from the vagina or external genitals and six from the eye.

In only a few cases was the history of the source of infection obtainable. In the case of vaginal infection, the little girl of two and one-half years, both parents were infected through the unfaithfulness of the father.

An eye infection in the boy of three weeks was probably due to carelessness of the father who had an active gonorrhea, though he had been repeatedly warned by his physician of the danger to the child.

The little girl of eight days was infected at birth by the mother who had a gonorrheal rheumatism during her pregnancy.

A vaginal case in a girl of nine was due to an attempted assault two weeks before and the girl of twelve gave a history of immorality. At the time the specimens were received the disease had been active from two days in one ophthalmia case to five weeks in another. The majority had progressed from eight days to three weeks.

So far as is known the further progress was not followed by microscopical examinations though previous experience has shown the clinically "cured" case may be actively infective, and on microscopical examination of expressed pus or exudate reveal numbers of gonococci.

## EPIDEMIC MENINGITIS.

WILL SHIMER, M. D.

During the month of March eight cases of epidemic cerebrospinal meningitis confirmed by lumbar puncture were reported; four cases from Hendricks county and four from Marion county.

This certainly is a very serious situation and will require the closest attention to prevent a heavy morbidity and mortality.

To prevent heavy morbidity isolation of sick and throat antiseptics are necessary to get rid of carriers. To prevent heavy mortality lumbar puncture and the use of serum are necessary. The following facts are to be remembered in making a lumbar puncture: The fourth lumbar interspace is, e. g., between the spine of the fourth and fifth lumbar vertebrae and is the point of election for the puncture which is found at the level of the line connecting the highest points of the iliac crests. The patient is placed on the

left side close to the edge of the operating table or bed. One assistant faces the patient and flexes the spine by grasping with his right hand the nape of the neck and with his left hand the legs. This position prevents struggling of the patient, brings into prominence the lumbar spines, and increases the elastic pressure of the spinal fluid.

**Method of Procedure:** The operator locates the desired place or space and steadies the vertebrae above by placing the thumb and middle finger of the left hand on the laminae, and the index finger on the spinous process. Grasping the needle and enclosed stilet in the right hand, and placing the index finger on the needle at the level at which it is assumed the needle will penetrate (i. e. from 2 to 5 centimetres, according to the age), it is plunged in the middle line of the space and along the upper border of the lower spinous process (so as to avoid the tubercle on the posterior extremity of the inferior surface of the spinous process), in a direction almost horizontal and at an inferior (caudad) angle of  $10^{\circ}$  to the axis of the spine. By directing the needle in this manner it can be inserted to a deeper level without encountering the anterior venous plexus of the vertebral column. The first few drops should be run over two glass slides and fixed by heat. These slides are to be used for microscopical examination. The remainder of the fluid should be run into a sterile bottle to be used for bacteriological examination. If the fluid is cloudy or not absolutely clear the antiserum should be injected. Not more than 10 or 15 c.c. of serum should be used in children. After injection patient should be watched and if there are any signs of collapse or falling of blood pressure artificial respiration should be given. In no case should the antiserum be given by syringe but it should be allowed to run in by gravity by means of a rubber tube and funnel attached to the puncture needle.

### PATHOLOGICAL SPECIMENS.

The laboratory is still making examinations of pathological tissues, although each report has contained a protest against this work, as most public health laboratories have not been examining pathological tissues. Recently other public health laboratories have begun to do tissue work, notably that of New York City.

Table 39 shows the extraordinarily large number of carcinoma as compared to sarcoma. The miscellaneous specimens greatly exceed all others. In many instances this is due to the fact that the

specimen submitted does not include the pathological process concerned. A pathologist can only report on the tissue submitted and not on the specimen to suit the clinical history of the case.

TABLE 39.

*Showing Number and Kinds of Pathological Tissue Examined.*

MONTH.	Carcinoma.	Sarcoma.	Miscellaneous.	Total.
October.....	7	2	23	32
November.....	2	4	17	23
December.....	13	5	22	40
January.....	14	1	34	49
February.....	10	0	16	26
March.....	7	5	19	31
April.....	13	1	22	36
May.....	10	4	23	37
June.....	5	1	24	30
July.....	10	0	30	40
August.....	14	1	21	36
September.....	9	1	24	34
Totals.....	114	25	275	414

## MALARIA.

ADA E. SCHWEITZER, M. D., Assistant Bacteriologist.

Of 146 specimens examined from October 1, 1913, to October 1, 1914, only ten were found to contain malarial parasites. So far as could be determined nine infections were of the tertian variety and one estivo-autumnal. In two cases infections occurred in Arkansas, two in Illinois, one in Mexico, one in Oklahoma and two in Indiana, and one unknown. History of previous attack is given in five cases. The time elapsing after the onset of the disease before the specimen was taken varied from four days to one month. Five specimens were taken after a chill, one just before and one during a chill. The time was not given in three cases.

Of the patients four were females and six males. Their ages were given as 18, 19, 20, 21, 25, 29, 38 and 54. One physician made a diagnosis of typhoid but the other cases were correctly diagnosed.

Since the adoption of the outfit containing slides the blood films submitted for examination have been larger, thinner and more evenly spread. In a few instances, however, too much pressure has been exerted, resulting not only in distorting and tearing the corpuscles but in crowding them to the edge of the slide. A drop of blood dried on the slide without spreading is practically worthless as the specimen is much too thick for microscopical examina-

tion. In the severe anaemias, since the blood spreads with difficulty, a number of films should be prepared. Frequently a physician reports that he is unable to get any blood. If the needle or lancet is inserted into the lobe of the ear vertically from below, gravity will aid in securing a flow of blood and better films may be prepared.

The directions accompanying the outfits should be carefully read and observed as they detail the method of procedure which is most likely to insure satisfactory preparation of specimens and consequently reliable results from examinations.

### HYDROPHOBIA.

Brains examined for evidence of rabies and results, will be found in Tables 41, 42, 43, 44, 45, 46 and 47.

Table 41 shows brains found positive according to counties for 1914. Positive brains were received from fifty-two counties out of the ninety-two counties in Indiana.

TABLE 40.

*Showing Number of Brains Examined and Found Positive, 1907-1914.*

MONTH.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average.
January.....		4	7	4	9	14	17	19	14
February.....		4	9	4	11	13	29	11	11
March.....		3	7	2	10	16	20	10	10
April.....		4	4	2	12	27	21	20	15
May.....		1	5	10	8	21	20	19	15
June.....		9	8	13	3	13	12	10	10
July.....		16	5	5	6	11	17	15	12
August.....		15	1	5	13	14	19	19	15
September.....		4	6	5	17	6	12	13	10
October.....		3	4	6	8	13	20	.....	13
November.....	1	2	6	3	9	12	22	.....	13
December.....	3	8	7	7	9	6	20	.....	13
Total.....	4	73	69	66	115	166	229	126	151



TABLE 41.  
*Showing Brains Found Positive for Rabies from Each County.*

COUNTY.	Number Positive.	COUNTY.	Number Positive.
Adams.....	0	Lawrence.....	8
Allen.....	0	Madison.....	4
Bartholomew.....	4	Marion.....	25
Benton.....	0	Marshall.....	0
Blackford.....	0	Martin.....	1
Boone.....	5	Miami.....	2
Brown.....	0	Monroe.....	5
Carroll.....	2	Montgomery.....	4
Cass.....	1	Morgan.....	0
Clark.....	0	Newton.....	0
Clay.....	3	Noble.....	0
Clinton.....	0	Ohio.....	0
Crawford.....	0	Orange.....	3
Daviess.....	0	Owen.....	2
Dearborn.....	6	Parke.....	4
Decatur.....	5	Perry.....	0
Dekalb.....	0	Pike.....	2
Delaware.....	0	Porter.....	1
Dubois.....	0	Posey.....	5
Elkhart.....	1	Pulaski.....	1
Fayette.....	3	Putnam.....	3
Floyd.....	1	Randolph.....	1
Fountain.....	0	Ripley.....	2
Franklin.....	1	Rush.....	8
Fulton.....	0	Scott.....	0
Gibson.....	3	Shelby.....	4
Grant.....	2	Spencer.....	0
Greene.....	1	Starke.....	1
Hamilton.....	3	Steuben.....	0
Hancock.....	3	St. Joseph.....	0
Harrison.....	0	Sullivan.....	4
Hendricks.....	5	Switzerland.....	0
Henry.....	6	Tippecanoe.....	2
Howard.....	0	Tipton.....	0
Huntington.....	1	Union.....	1
Jackson.....	6	Vanderburgh.....	0
Jasper.....	1	Vermillion.....	1
Jay.....	0	Vigo.....	20
Jefferson.....	9	Wabash.....	0
Jennings.....	2	Warren.....	0
Johnson.....	3	Warrick.....	2
Knox.....	2	Washington.....	0
Kosciusko.....	0	Wayne.....	3
Lagrange.....	0	Wells.....	0
Lake.....	0	White.....	0
Laporte.....	0	Whitley.....	0
Total.....	76	Total.....	119

TABLE 42.  
*Showing Brains Examined for Rabies and Results.*

Month.	Positive.	Negative.	Total.
October.....	20	7	27
November.....	22	15	37
December.....	20	5	25
January.....	19	6	25
February.....	11	5	16
March.....	10	11	21
April.....	20	7	27
May.....	19	10	29
June.....	10	19	29
July.....	15	15	30
August.....	19	9	28
September.....	13	4	17
Total.....	198	113	311

TABLE 43.  
*Showing Number of Gasserian Ganglions Examined Each Month, With Results.*

Month.	Positive.	Negative.	Total.
October.....	6	8	14
November.....	7	12	19
December.....	9	4	13
January.....	6	0	12
February.....	5	5	10
March.....	6	11	17
April.....	13	6	19
May.....	7	6	13
June.....	11	3	14
July.....	8	9	17
August.....	6	2	8
September.....	4	3	7
Total.....	163	88	75

TABLE 44.  
*Showing Number of Guinea Pigs Inoculated for Tuberculosis and Rabies, With Results.*

Month.	Tuberculosis.		Rabies.	
	Positive.	Negative.	Positive.	Negative.
October.....	0	1	1	14
November.....	0	0	0	2
December.....	0	0	0	12
January.....	0	0	0	4
February.....	0	1	0	4
March.....	0	3	0	0
April.....	1	4	0	1
May.....	0	2	0	0
June.....	0	0	0	0
July.....	0	0	0	0
August.....	0	0	0	0
September.....	0	0	0	0
Total.....	1	11	1	37

TABLE 45.

*Showing Brains Found Positive and Percentage Positive, 1907-1914.*

YEAR.	Positive.	Per Cent. Positive.
1907.....	12	84
1908.....	73	85
1909.....	69	44
1910.....	86	51
1911.....	114	48
1912.....	158	50
1913.....	198	57
1914.....	198	63

TABLE 46.

*Showing Number of Persons and Stock Bitten by Rabid Animals, 1910-1914.*

YEAR.	Persons.	Stock.
1910.....	60	60
1911.....	72	59
1912.....	100	75
1913.....	237	156
1914.....	198	198

TABLE 47.

*Showing Number and Kinds of Brains Examined.*

MONTH.	Dogs.		Cats.		Horses.		Cows.		Mules.		Hogs.		Fox.	
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
October.....	14	5	3	0	0	0	3	1	0	0	1	0	0	0
November.....	16	9	3	3	0	0	2	2	0	0	1	0	0	0
December.....	16	4	1	0	2	0	1	0	0	0	0	0	0	0
January.....	17	3	1	0	0	0	1	0	0	0	1	0	1	0
February.....	8	1	2	1	0	0	1	1	0	0	1	0	0	0
March.....	8	10	2	1	0	0	0	0	0	0	0	0	0	0
April.....	17	4	2	0	0	0	1	3	0	0	0	0	0	0
May.....	7	6	1	1	1	1	1	1	0	0	1	0	0	0
June.....	18	7	0	2	1	1	0	1	1	0	0	0	0	0
July.....	14	10	0	4	0	0	0	1	0	0	0	0	0	0
August.....	18	0	1	1	0	0	0	1	0	1	0	1	0	0
September.....	11	1	0	0	0	0	1	1	0	0	0	0	0	0
Total.....	164	66	15	14	4	1	11	12	1	1	5	2	1	0

## FECES FOR TYPHOID BACILLI.

Table 48 shows the results of forty-one examinations of feces for typhoid bacilli. There are only four positive results. This is a remarkably low percentage. Most of the forty-one specimens were sent in early in the disease for diagnosis in atypical cases where the Widal was negative. Since typhoid bacilli are most usually excreted in the feces before the third or fourth week any examinations made before that time are likely to be negative. Stool examinations are chiefly valuable to determine whether the patient is free from the bacilli after recovery, but in no cases were we able to do this. Most physicians prefer not to embarrass their patient by proving them typhoid bacilli carriers. Post typhoid stool examinations will not increase until all time health officers are appointed who have no particular interest in any particular individual.

The technic has been considerably improved and elaborated. The method of examination is as follows: The specimens are sent to the laboratory in Stokes' bile medium. Some of the feces-bile mixture is poured into 100 c.c. water blanks and allowed to set for thirty minutes. At the end of this time some of the mixture is smeared by sterile bent glass rods on six 15 c.m. endo plates and two malachite green plates, according to the Lentz Tietz Verfahren. At the end of twenty-four hours the colorless colonies are inoculated into Russels' double sugar medium. Those colonies that form acid and no gas in stab cultures and none in the streak are planted into plain broth. At the end of twelve hours they are tested out with a high agglutinating typhoid and paratyphoid B. serum. Only those bacteria are called typhoid or paratyphoid that are well agglutinated and immobilized by their specific serum. A careful study of the many methods proposed for the isolation of typhoid bacilli convinces one that there is no specific medium for their isolation. Most of the methods proposed give better results in the hands of the devisor than in any one else's. This method does not compare in usefulness to Widal and bacteriological examinations of blood for the diagnosis of typhoid.

The cultivation of feces for typhoid is useful in determining whether the patient is free from typhoid bacilli after the disease and whether he is a healthy carrier.

TABLE 48.

*Showing Number of Specimens of Feces Examined for Typhoid Bacilli by Months, With Results.*

Months.	Positive.	Negative.
October.....	0	8
November.....	0	5
December.....	1	2
January.....	0	1
February.....	0	2
March.....	1	0
April.....	0	1
May.....	0	1
June.....	0	9
July.....	0	5
August.....	2	0
September.....	0	3
Total.....	4	37

## URINE EXAMINATION.

Table 49 shows number of urine examinations made during the year. Of the 372 examinations made very few should have been done by the laboratory and were of little value when done. Most of the specimens were old and alkaline, and had any tube casts been present they would have been destroyed by the changed reaction. The presence of albumin is of little significance since the urine was improperly taken and contained considerable pus, which gave an albumin reaction even when none was excreted by the kidneys.

Every physician who has the right to practice medicine should know how to make ordinary urine examination so that the laboratory in most cases should only examine urine for tubercle bacilli.

TABLE 49.

*Showing Number and Kinds of Urine Examinations Made.*

MONTH.	Tuberculosis.		Gonococci.		Microscopical.	Total.
	Positive.	Negative.	Positive.	Negative.		
October.....					27	27
November.....					34	34
December.....					39	39
January.....					29	29
February.....				1	29	30
March.....					37	37
April.....				1	38	39
May.....					21	21
June.....		2			27	29
July.....		2			31	33
August.....		1			36	37
September.....		2			15	17
Total.....		7		2	372	372

## OUTFITS FOR SENDING SPECIMENS TO THE LABORATORY.

Table 50 shows the number and kind of outfits sent out each month during 1914 according to months.

Table 51A shows the number and kinds of outfits sent out each year from 1906 through 1914.

The purpose of sending outfits to the doctors is to make it easy for them to meet the United States post office regulations. In no case are the outfits sold to the doctors, they are loaned, yet many of the outfits are torn up and used for all sorts of purposes. Many physicians so little appreciate the convenience of the outfits that they object to paying insignificant express charges and constantly send them in wrongly classified to decrease the postal charges.

Another source of considerable waste is the fact that some physicians habitually order more outfits than they need or can use, just because they can be obtained free of charge. Local health officers should keep an adequate supply of outfits on hands at all times. Outfit supply stations should be located at drug stores or the local health office in the city hall or courthouse rather than in the private office of the local health officer.

TABLE 50.

*Showing Number and Kinds of Outfits Sent Out, 1906-1914.*

YEAR.	Tuberculosis.	Diphtheria.	Gonococci.	Malaria.	Widal.	Total.
1906.....	358	54		25	190	627
1907.....	3,417	1,676		223	1,504	6,820
1908.....	4,289	2,869		656	1,924	8,828
1909.....	4,240	1,956	402	500	2,128	9,226
1910.....	4,285	2,679	913	518	2,206	10,601
1911.....	4,740	4,311	556	397	2,781	12,785
1912.....	5,062	12,602	753	355	1,968	20,430
1913.....	6,295	12,354	1,054	469	2,587	20,759
1914.....	5,989	12,723	1,253	913	2,816	24,286
Totals.....	39,275	51,895	4,931	3,556	19,904	.....

TABLE 51A.

*Showing Number and Kind of Outfits Sent Out Each Month, 1914.*

MONTH.	Tubercu- losis.	Diph- theria Regular.	Diph- theria Epi- demic.	Gono- cocci.	Malaria.	Blood Count.	Widal.	Hook Worm.	Bile Media.	Total.
October .....	442	1,310	.....	120	65	54	285	7	96	2,379
November .....	277	1,733	.....	57	27	1	144	.....	.....	2,239
December .....	342	1,057	.....	56	14	14	98	6	3	1,590
January .....	386	1,048	.....	76	16	9	99	3	2	1,639
February .....	424	2,123	.....	171	18	69	267	.....	13	3,085
March .....	550	892	.....	39	10	18	169	1	6	1,685
April .....	500	457	.....	69	7	15	120	.....	1	1,169
May .....	341	174	.....	23	7	17	144	.....	6	712
June .....	1,403	660	.....	492	146	191	607	66	101	3,666
July .....	426	212	.....	60	30	15	290	1	22	1,065
August .....	500	386	.....	34	36	7	350	.....	8	1,321
September .....	398	471	2,300	49	37	20	243	1	18	3,438
Total .....	5,989	10,523	2,200	1,253	413	428	2,816	85	276	24,286

TABLE 51B.  
Showing Outfits Probably Out Now and Outfits Probably Lost.

YEAR.	Tuberculosis.			Diphtheria.			Widal.			Gonococci.			Malaria.		
	S. O.	R.	D.	S. O.	R.	D.	S. O.	R.	D.	S. O.	R.	D.	S. O.	R.	D.
1906.....	358	1,503	1,503	54	171	171	100	499	499	..	..	..	25	45	20
1907.....	3,417	2,116	1,758	1,676	633	579	1,504	802	612	..	..	..	223	167	56
1908.....	4,269	3,136	2,881	2,959	2,779	1,103	1,504	1,270	234	..	..	..	656	104	462
1909.....	4,240	3,458	3,831	1,956	1,445	514	1,924	1,508	416	..	..	..	500	189	311
1910.....	4,285	3,583	657	2,679	1,638	318	2,128	1,104	1,024	402	178	178	518	203	315
1911.....	4,740	4,228	57	4,311	2,452	227	2,206	2,038	1,172	913	349	53	397	200	197
1912.....	5,662	4,688	52	4,311	9,377	5,066	2,781	1,850	931	556	534	22	355	155	200
1913.....	6,295	4,784	878	12,692	15,792	3,100	1,968	1,609	359	587	587	166	469	148	321
1914.....	6,295	5,048	1,147	12,354	11,064	1,290	2,537	1,603	984	1,054	542	512	..	..	..
Total	..	..	644	Outfits lost.	..	..	..	..	3,009	..	..	1,048	..	..	1,840
Percent	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
not sent	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
in.....	1.9	..	..	1.6	..	..	17	..	..	28	..	..	58	..	..
1914 sent	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
out.....	..	..	5,089	..	..	12,723	..	..	2,816	..	684	1,233	..	..	913
Still out.	..	..	6,033	..	..	6,053	..	..	5,825	..	..	2,301	..	..	2,753

S. O. Outfits sent out.  
R. Specimens received.  
D. Difference between outfits sent out and specimens received.





**INDIANA STATE BOARD OF HEALTH**  
**INDIANAPOLIS**



**Information Concerning Free Bac-  
teriological and Pathological  
Examinations**

**(Revised Edition, 1914)**

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**Address Specimens and Letters to**  
**INDIANA STATE BOARD OF HEALTH**  
**Indianapolis, Indiana**  
**DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY**

## TUBERCULOSIS.

The early recognition of this disease is very important for the benefit of the patient and protection of the public. Our special containers for sputum, *shown on opposite page*, fully comply with the United States postal regulations and can be obtained *free of charge* either from this laboratory or from local health officers. These containers and no others shall be used for transmitting sputum specimens to the laboratory. *In sending sputum specimens be sure to read the enclosed directions and fill out the enclosed card. Put sufficient postage on the outfit to send it by first-class mail.* All material suspected of containing tubercle bacilli should be sent to this laboratory for examination. Not only sputum specimens from cases of possible pulmonary tuberculosis, but the pus from broken down cervical glands and from so-called "cold abscesses"; the discharge from obscure bone and joint lesions, and the exudate from cases of pleurisy of obscure origin should be examined microscopically. Successive examinations of sputum may be the only means of satisfactorily differentiating pulmonary tuberculosis from other lung affections.

In cases of obscure chronic intestinal affections not *associated with pulmonary tuberculosis* the finding of tubercle bacilli in the feces may prove the trouble to be tuberculous enteritis. Recent work indicates that in cases of acute tuberculosis of the lungs the bacilli can frequently be found in the feces before they are found in the sputum. This is believed to be due to tubercle bacilli being excreted from the blood by the liver with the bile.

The urine from tuberculous kidneys or bladder usually contains a few tubercle bacilli. In order to avoid contamination with smegma bacilli, which are difficult to distinguish from tubercle bacilli, the urine should be collected in one or two ways: best of all, by means of a sterile catheter; or in a male, by carefully cleansing the urinary meatus, allowing the patient to urinate and collecting only the *last half* of the urine. Where requested, guineapigs are injected with urine suspected of containing tubercle bacilli, if the specimen has been taken with a catheter and sent in in a sterile bottle.

INDIANA STATE BOARD OF HEALTH  
BACTERIOLOGICAL LABORATORY

### DIRECTIONS FOR THE COLLECTION OF SPUTUM.

1. Do not pour out the 5 per cent. carbolic solution contained in the glass bottle.
2. Collect the sputum in the morning before the patient has taken any food, or after a severe paroxysm of coughing. Purulent or cheesy matter is more likely to contain tubercle bacilli.
3. See that the bottle is tightly corked, wash it thoroughly in hot soap-suds, dry and repack in cotton.
4. Fill out the blank in full, replace in the Laboratory package and mail, postage prepaid, to the State Laboratory of Bacteriology.

INDIANA STATE BOARD OF HEALTH  
' BACTERIOLOGICAL LABORATORY[illegible]

## CLINICAL CARD



## DIPHTHERIA.

There are very few diseases in which an early diagnosis has so important a bearing on prognosis as in diphtheria. On account of the unfortunate and disastrous sequelæ that sometimes follow diphtheria, even in very mild cases, cultures should be made from all sore throats, especially in children, and sent to the laboratory for diagnosis. Many cases of sore throats diagnosed "*ordinary tonsillitis*" have died two or three weeks later from sudden heart failure. Simple tonsillitis is frequently not easily differentiated from diphtheria except by cultures. In cases of diphtheria the only method of finding out when the patient is free from the bacilli is by the culture method.

*Before sending in specimens for diphtheria diagnosis get our regulation containers. After reading the enclosed directions carefully fill out the enclosed card on both sides and be sure to put on sufficient postage to send the outfit by first-class mail.*

For taking cultures from all the children in any school we have *epidemic outfits* consisting of history card, test tube and sterile swab. These outfits are put up in 50, 100 or more per lot. For more detailed information see our circular on "*diphtheria carriers*."

# DIPHTHERIA OUTFIT

## INDIANA STATE BOARD OF HEALTH BACTERIOLOGICAL LABORATORY

### Directions for Collecting Specimens in Suspected Cases of Diphtheria

**Throat Culture.**—No local antiseptic application should be made for at least two hours previous to taking the culture. Patient's throat should be cleared of any adherent food particles, etc.

1. Have the patient in good light.
2. Rub the swab thoroughly against any membrane, exudate or inflamed area in the throat, revolving the swab in the fingers in such a way as to bring it thoroughly in contact with the suspected area.
3. Do not lay the swab down or allow it to touch anything other than the throat of the patient and the tube in which it is contained.
4. Return the swab to the tube, replace the cotton plug and return the tube to the case.

**Nasal Culture.**—Cultures for release should be taken from both the nose and throat in all cases. Use one swab for the nose and another for the throat. Both may be sent in same mailing case.

Cultures for diagnosis may be made from either the nose or throat, or both, at the option of the physician. If from both, use separate mailing cases.

1. The physician should stand behind the patient, who should preferably be in a sitting posture, if the patient's condition allows it. Place the left hand on the patient's chin and hold the head firmly against the body of the operator. With the right hand insert the swab about one half inch upward into the right nostril. Then raise the hand so that the shaft of the swab is parallel to the floor of the nose and with gentle rotation pass the swab back to the posterior pharyngeal wall. Withdraw the swab and repeat the process in the other nostril.
2. Remove the swab and return it to the test-tube, taking care that it does not touch any object other than the tube in which it is contained. Replace the cotton plug and return the tube to the case.

Wrap tube in cotton, replace in laboratory case and mail at once. **POSTAGE PREPAID**, to State Laboratory of Bacteriology, No. 122 State House, Indianapolis, Indiana.

### DIRECTIONS



OUTSIDE CONTAINER

TUBE  
WITH SWAB



INSIDE CAN

## INDIANA STATE BOARD OF HEALTH

### BACTERIOLOGICAL LABORATORY

Diphtheria:		Reported	
B. Diphtheria	Streptococcus	Staphylococcus	
B. Psittacina	Strep. of Vincent	Swab or Culture	
(See no. 1000 for instructions only - use orange card)			
Is Culture from Nose?		Is Culture from Throat?	
Date of Taking Culture		Hour: A. M. P. M.	
Is It for Diagnosis?		Or Release from Quarantine?	
Patient's Name		Age	
Patient's Address		Sex	
Physician's Name			
Physician's Address			

### CLINICAL CARD

### TYPHOID FEVER.

In its early stages and its atypical form, this disease is often difficult to diagnose. Examinations of the blood for the Widal reaction frequently clears up the whole case. This reaction is rarely present before the ninth or tenth day of well-marked symptoms; sometimes it does not appear until convalescence has begun. When a given specimen is negative a second specimen should be sent in three or four days. Even a third or fourth sample of blood should be sent if the clinical symptoms continue, inasmuch as a number of negative Widal reactions may be of assistance in differentiating acute miliary tuberculosis from typhoid. A previous attack of typhoid fever within two years, or in some cases more, may render a correct interpretation of the results difficult. *Before sending in a specimen of blood for Widal examination get one of our regulation containers, read the directions in the outfit carefully, be sure to fill out the enclosed card on both sides and put on sufficient postage to send the outfit by first-class mail.*

# WIDAL OUTFIT FOR TYPHOID

## INDIANA STATE BOARD OF HEALTH BACTERIOLOGICAL LABORATORY

### Directions for Collecting Blood for Widal Test

1. With clean finger prick off neatly and *separately* the tips of *each* end of the middle-shaped (3rd) finger.
2. Collect 1 drop of patient's *each* or tip of this finger with *separate* water folded (4x) sterile glass or cork off well with a *sterile* needle. A *sterilized* straight pin when is the best.
3. As the Widal test is not involving the whole horizontal finger one end in the drop and allow the blood to fall at least half full. *Three or four* large drops will be sufficient. If one small needle has been used the blood may be collected from the *same* end of the finger or hole of the ear may have to be *sterily* punctured with a *sterile* needle.
4. When the 1st drop is collected the *second* end of the finger in the *other* of a smaller amount. As soon as this *second* drop is collected the blood may be *with a* water on like that which which is shake down *your* glass bottle. *Then* seal off the sides and *the* *bottom* of the bottle *with* a *sterile* cork. *Then* seal the bottle with *sterilized* tape and *then* it is *ready* with the 4 cc. of blood in the bottle.
5. Fill in a *separate* mixing *water* and *then* it is *ready* with the 4 cc. of blood in the bottle.

## INDIANA STATE BOARD OF HEALTH LABORATORY OF HYGIENE

WIDAL REACTION

### DIRECTIONS

### CLINICAL CARD

### CAPILLARY TUBES



### OUTSIDE CONTAINER



### TYPHOID BACILLI-CARRIERS.

A large number of cases of chronic typhoid bacilli-carriers have been reported recently. About four persons out of every hundred persons who have typhoid become carriers for a longer or shorter time. These carriers are a very common source of new cases. It would be well for every physician to watch his convalescent cases for some time and send specimens of feces and urine to this laboratory to determine whether the patients are free from typhoid bacilli or not. Specimens must be sent in one of our official mailing cases. *Before taking the specimen, read carefully the enclosed instructions, then fill out the card in full. Be sure to put sufficient postage on the outfit to send it by first-class mail.*

# TYPHOID FECES OUTFIT

## DIRECTIONS FOR TAKING CULTURES FROM STOOLS TO BE EXAMINED FOR TYPHOID BACILLI

Carefully unroll the swab which is wrapped in paper, straighten out the wire without touching the cotton, dip the cotton end of the swab into the stool, then dip the saturated cotton end into the fluid contents of the small test tube. After shaking the swab around in the tube enough to get a considerable amount of fecal matter in suspension, remove the swab and burn it, cork the tube carefully and mail it to us in the container in which it is sent you.

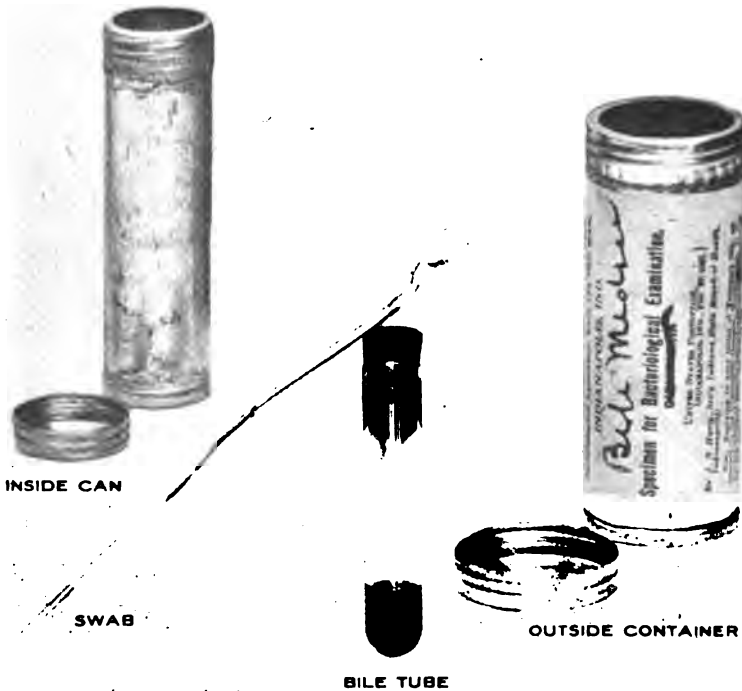
Communications should be addressed to

## DIRECTIONS

## CLINICAL CARD

INDIANA STATE BOARD OF HEALTH  
BACTERIOLOGICAL LABORATORY

Patient No.	PHYSICIAN'S NAME	ADDRESS	DATE
	FECES OR URINE	ADDRESS	
	PATIENT'S NAME	NATIONALITY	
	PATIENT'S AGE	DATE OF ONSET	
	DATE OF EARLIEST SYMPTOMS		
	CLINICAL DIAGNOSIS		
	TEMPERATURE	PULSE	RESPIRATION
	HAS PATIENT HAD "TYPHOID BEFORE?"		
	IF SO, WHEN, MONTH AND YEAR?		
	HOW MANY IN THE FAMILY		
	ARE THERE ANY OTHER CASES OF "TYPHOID IN THE FAMILY?"		



## GONORRHEA.

There are few things which contribute so much to conjugal unhappiness and which work such havoc on the eyes of infants as this disease. In its acute stage, this disease is usually diagnosed in male patients without particular difficulty. But only by a number of microscopic examinations can one establish the fact that the infection has been eradicated. Gonorrhea is much less easily diagnosed clinically in the female. Hence suspicious cases of acute vaginitis, especially if accompanied by smarting on urinations, should be subjected to laboratory examination. On account of the remarkable luxuriance of the bacterial flora of vaginal discharge, it is better to press out such secretion as has collected in the urethra or cervix uteri and make the smear from there. *Before sending in a specimen of pus get one of our regulation containers, read the enclosed directions carefully, and be sure to fill out the enclosed card on both sides and to put sufficient postage on the container to carry it by first-class mail.*

# INDIANA STATE BOARD OF HEALTH LABORATORY OF HYGIENE

## DIVISION OF PATHOLOGY AND BACTERIOLOGY

1. Take pus from urethra or Bartholin's glands in the female.
2. In males, where the disease is chronic, take smear after massaging the prostate and stripping the urethra.
3. Place small drop of pus on the end of a perfectly clean glass slide.
4. Draw the end of another glass slide over the drop of pus and spread as evenly and thin as possible over the first slide.
5. Let the film dry thoroughly. Do not leave the glass slides sticking together.
6. Always send two smears.

Communications should be addressed to

Director of the Bacteriological Division  
State Laboratory of Hygiene, Indianapolis

### DIRECTIONS

### CLINICAL CARD

INDIANA STATE BOARD OF HEALTH BACTERIOLOGICAL LABORATORY		ADDRESS		DATE	
PHYSICIAN'S NAME		ADDRESS		NATIONALITY	
PUS FOR GONOCOCCI		SEX		DATE OF EARLIEST SYMPTOMS	
PATIENT'S NAME		CLINICAL DIAGNOSIS		WHEN CLINICAL HISTORY	
PATIENT'S AGE					



GLASS SLIDES



OUTSIDE CONTAINER



## MALARIA.

The diagnosis of malaria is rendered simple by finding the plasmodia in the blood. The results of an examination depend largely on the skill with which the blood smear is made. Before sending a specimen for malaria examination get one of our regulation outfits. *Previous to taking the specimen read the enclosed directions carefully, after which the enclosed clinical card must be filled out on both sides. Be sure to put sufficient postage on the outfit to send it first-class.*

## RABIES (HYDROPHOBIA).

The unusually large number of cases of rabies among dogs and other domestic animals in various parts of the State has amounted to an epidemic. Not only for the benefit of the person bitten but also as a safeguard to the public health this disease should be accurately diagnosed. This can only be done in a laboratory fully equipped for this work, such as the Laboratory of Hygiene.

*In no case should the suspected animal be killed at once.* It should be confined and properly cared for, in a secure place, for ten to fourteen days. If it does not sicken or die within this time one can be practically sure that the animal does not have rabies. If the animal dies, its head should be cut from the body, put in a water-tight container, packed round with ice just as ice cream is packed for shipment, and sent directly to the laboratory, express charges fully prepaid. All data concerning the rabid animals should be sent by mail and not in the vessel with the head.

The longer the animal is allowed to live, the more reliable will be the results of the examination. In killing the animal care should be taken not to mutilate the brain and spinal cord. All animals bitten should be kept in close quarantine and carefully observed.

## PASTEUR TREATMENT.

Any resident of the State who is bitten by a rabid animal and who is not financially able to pay for the Pasteur preventive treatment, may receive this treatment from the State Board of Health. Patients must obtain a certificate from the local health officer, certifying that he was bitten by an animal known or supposed to be rabid, and a certificate from the township trustee certifying that he is unable to pay for the treatment. In such cases the State will furnish the necessary treatment and will pay the traveling and living expenses of the patient while under treatment at the Pasteur Institute of the State Board of Health. Blank certificates may be obtained from this laboratory.

# MALARIA OUTFIT

## INDIANA STATE BOARD OF HEALTH LABORATORY OF HYGIENE DIVISION OF PATHOLOGY AND BACTERIOLOGY

Read the different parts of the outfit carefully. The outfit is made up of the following parts:

1. Clean the slides and the tips of the pipette, avoiding the use of kerosene, alcohol, or any caustic acid or other strong reagent. Soap and water followed by alcohol will do the trick. If the tips of the pipette are not clean, the results will be unreliable.
2. Wipe off the first two or three drops of blood with a clean cloth, and touch the very moist blood with the edge of a sterile glass slide, so as to secure a very thin layer of blood.
3. Draw the edge of another glass slide over the surface of the glass slide, so that the drop is spread, at an angle of about thirty degrees, thus spreading the blood over the surface of the slide. The spreader should be an exact fit, and should be thoroughly cleaned before use. **DO NOT LEAVE THE GLASS SLIDES STICKING TOGETHER.** The slides are supplied from each case, receive them from the laboratory.
4. Draw the edge of another glass slide over the surface of the glass slide, so that the drop is spread, at an angle of about thirty degrees, thus spreading the blood over the surface of the slide. The spreader should be an exact fit, and should be thoroughly cleaned before use. **DO NOT LEAVE THE GLASS SLIDES STICKING TOGETHER.** The slides are supplied from each case, receive them from the laboratory.

Director of the Pathological Division, State Laboratory of Hygiene, Indianapolis, Ind.

## Indiana State Board of Health, Laboratory of Hygiene.

(For use made out at the laboratory only.)

MALARIA: Result

Rec'd

For use made out at the laboratory only. See notes on label.

Date of Taking Blood: \_\_\_\_\_ Hour: \_\_\_\_\_ A. M. \_\_\_\_\_ P. M.

Patient's Name: \_\_\_\_\_ Age: \_\_\_\_\_ Sex: \_\_\_\_\_

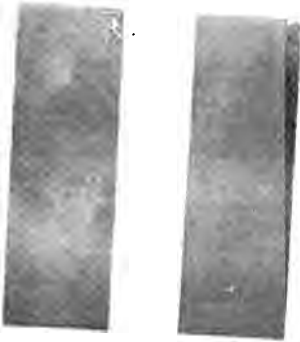
Date of Onset of Symptoms: \_\_\_\_\_ Where Contracted: \_\_\_\_\_

Has Patient been Malaria before? \_\_\_\_\_

If so, give date of last attack (month and year): \_\_\_\_\_

## DIRECTIONS

## CLINICAL CARD



GLASS SLIDES



OUTSIDE CONTAINER

### HOOK-WORM.

There are many cases of hook-worm infection in Kentucky, just across the line from Indiana. Although very few cases have been found by physicians in Indiana there is no doubt that there are many cases of hook-worm infection in Indiana. *If you have a suspicious case send for one of our containers, read the enclosed instructions carefully, fill out the enclosed clinical card and be certain to put enough postage on the outfit to send it by first-class mail.*

# DIRECTION FOR COLLECTING SPECIMEN.

Put a specimen of the bowel movement or segment of parasite into the bottle and cork tightly.

A second specimen should always be sent if the result of the first is negative, and the case is suspicious clinically.

(OVER)

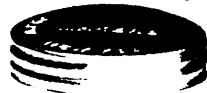
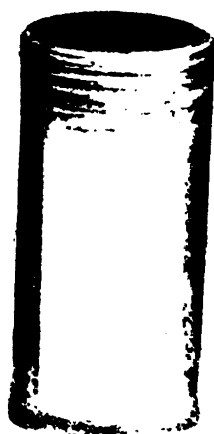
## DIRECTIONS

INDIANAPOLIS, IND. 46202-1000  
 PHONE 462-1000  
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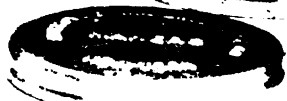
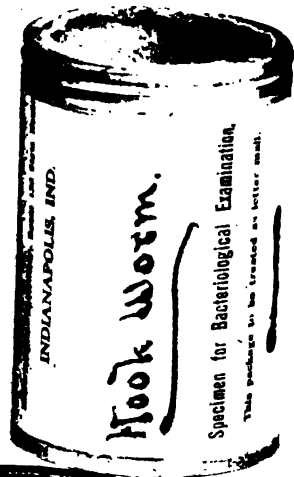
## CLINICAL CARD



INSIDE BOTTLE



INSIDE CONTAINER



OUTSIDE CONTAINER



### TUMORS AND BLOOD.

It is not the purpose of this laboratory to compete with private laboratories. Its business is to examine specimens from such diseases *only as affect the public health. The various kinds of tumors and such blood diseases as leukemia, pernicious anæmia, etc., have no place in public hygiene, and material from such cases should be sent to private laboratories for examination.* However, in cases of patients who are unable to pay for such work, the State Board of Health will gladly do it free of charge. Tissue specimens should be sent in a solution of 4% formaldehyde, i. e., one part formalin and nine parts water. Specimens of blood for examination should be sent to the laboratory in our blood smear outfits and taken according to the directions in that outfit. *Be sure to fill out the clinical card on both sides and put sufficient postage on the outfit to send it by first-class mail.* If clinical card is not filled out examination of the specimen will not be made.



GLASS SLIDES



OUTSIDE CONTAINER

# DIRECTIONS

**INDIANA STATE BOARD OF HEALTH**  
DIVISION OF PATHOLOGY AND BACTERIOLOGY  
LABORATORY OF HYGIENE

*Blood for differential counts of Leucocytes and to determine the presence of any abnormal red cells, e.g., Anemia or Leukemia*

1. Cleanse the skin of the lobe of the ear, avoiding the use of bichloride of mercury, creosote acid or other strong reagent. Soap and water, followed by alcohol and ether, are satisfactory.
2. Prick the lobe deeply to ensure a free escape of blood, manipulating the lobe with the fingers, if necessary, to secure a sufficient amount. A surgical needle or pointed tenotomy may be used for the puncture.
3. Wipe off the first two or three drops which exude with a clean cloth, and touch the glass slide with the edge of a perfectly clean glass slide, so as to secure a very small drop of blood.
4. Draw the edge of another glass slide over the surface of the glass slide to which the drop is attached, at an angle of about thirty degrees, thus spreading the blood in a thin film on the second glass slide. There should not be an instant's delay between the two operations described in paragraphs 3 and 4. Let the film dry thoroughly. Do not touch the slides.
5. **THE GLASS SLIDES STICKING TOGETHER.** Make two such glass slides, spread the blood on the first, and place the second box and fill out the card supplied by the laboratory. Mail both card and box to the laboratory.

Director of the Bacteriological Division, Indiana University of the State, Indianapolis, Ind.

# CLINICAL CARD

**INDIANA STATE BOARD OF HEALTH**  
**BACTERIOLOGICAL LABORATORY**

ADDRESS \_\_\_\_\_

DATE \_\_\_\_\_

ADDRESS \_\_\_\_\_

NATIONALITY \_\_\_\_\_

SEX \_\_\_\_\_

PULSE \_\_\_\_\_

RESPIRATION \_\_\_\_\_

TEMPERATURE \_\_\_\_\_

BRIEF CLINICAL HISTORY \_\_\_\_\_

DATE OF EARLIEST SYMPTOMS \_\_\_\_\_

CLINICAL DIAGNOSIS \_\_\_\_\_

PATIENT'S NAME \_\_\_\_\_

PATIENT'S AGE \_\_\_\_\_

NATURE OF SPECIMEN \_\_\_\_\_

PHYSICIAN'S NAME \_\_\_\_\_

NOTE: THIS CARD TO BE USED FOR ALL SPECIMENS EXCEPT SPITUM, THROAT SWABS, AND SPORES FOR ANIMAL TESTS OR MALARIO.

### PASTEUR TREATMENT.

Two hundred and thirty persons were treated to prevent rabies. These persons came from thirty-four counties. Not a single case has died of rabies this year.

Table 52 shows distribution of patients according to counties.

Table 53, etc., detailed information as to patients, character, of bites, animals doing the biting and character of material used for immunizing purposes.

Table 58 gives the name, age, sex and counties from which patients came from October 1, 1913, to October 1, 1914.

Thus far 532 patients have been treated by the State Board of Health. Of these two have died, giving the Pasteur Institute .37 per cent. of failures, the usual percentage of failures being about .5 per cent.

The number of brains examined for rabies and found positive for 1914 was the same as for 1913, e. g., 198, as is shown by Table 40. This table shows that rabies is very little more prevalent during the summer months than during the winter, September and March showing the lowest average number of positives for 1907-1914.

TABLE 52.

*Number of Persons Who Have Taken Pasteur Treatment During the Last Year,  
By Counties.*

Adams.....	0	Lawrence.....	11
Allen.....	0	Madison.....	10
Bartholomew.....	1	Marion.....	73
Benton.....	0	Marshall.....	0
Blackford.....	0	Martin.....	2
Boone.....	0	Miami.....	1
Brown.....	0	Monroe.....	3
Carroll.....	0	Montgomery.....	0
Cass.....	0	Morgan.....	0
Clark.....	0	Newton.....	0
Clay.....	1	Noble.....	0
Clinton.....	0	Ohio.....	0
Crawford.....	0	Orange.....	0
Daviess.....	0	Owen.....	1
Dearborn.....	1	Parke.....	0
Decatur.....	2	Perry.....	0
DeKalb.....	0	Pike.....	1
Delaware.....	0	Porter.....	0
Dubois.....	0	Posey.....	1
Elkhart.....	0	Pulaski.....	1
Fayette.....	4	Putnam.....	1
Floyd.....	1	Randolph.....	0
Fountain.....	0	Ripley.....	0
Franklin.....	0	Rush.....	13
Fulton.....	0	Scott.....	0
Gibson.....	6	Shelby.....	7
Grant.....	0	Spencer.....	0
Greene.....	0	Starke.....	0
Hamilton.....	2	Steuben.....	0
Hancock.....	0	St. Joseph.....	0
Harrison.....	1	Sullivan.....	3
Hendricks.....	3	Switzerland.....	0
Henry.....	8	Tippercanoe.....	2
Howard.....	1	Tipton.....	0
Huntington.....	0	Union.....	1
Jackson.....	0	Vanderburgh.....	0
Jasper.....	6	Vermillion.....	0
Jay.....	0	Vigo.....	37
Jefferson.....	0	Wabash.....	0
Jennings.....	4	Warren.....	0
Johnson.....	1	Warrick.....	0
Knox.....	5	Washington.....	0
Kosciusko.....	0	Wayne.....	8
Lagrange.....	0	Wells.....	0
Lake.....	0	White.....	0
Laporte.....	0	Whitley.....	0
Total.....	53	Total.....	177

TABLE 53.

*Classification of Persons Who Have Taken Pasteur Treatment During  
the Last Year.*

Males .....	140
Females .....	90
Total number .....	230

TABLE 54.

*Showing Locations of Patients' Bites.*

Bitten on hand.....	76
Bitten on face.....	22
Bitten on face and head.....	0
Bitten on leg.....	39
Bitten on leg and hand.....	3
Bitten on face and hand.....	5
Bitten on arm.....	25
Bitten on head.....	1
Bitten on foot.....	5
Bitten on body.....	5
Bitten on face, leg and arm.....	1
Bitten on leg and foot.....	1
Bitten on hand, leg and body.....	1
Saliva on hands.....	44
Cut on hand with infected knife.....	1
Infected by nursing patient with hydrophobia.....	1
Total .....	230

TABLE 55.

*Mode of Infection.*

Bitten by rat.....	1
Bitten by cats.....	21
Bitten by hog.....	1
Bitten by dogs.....	197
Infected by cows.....	8
Infected by person.....	1
Cut by knife.....	1
Total number patients .....	230

TABLE 56.

*Showing Ages of Persons Who Have Taken Pasteur Treatment During the Past Year.*

Age Period.	No. of Cases.
1 to 10 years.....	92
11 to 20 years.....	59
21 to 30 years.....	56
31 to 40 years.....	29
41 to 50 years.....	14
51 to 60 years.....	7
61 to 70 years.....	3

TABLE 57.

*Virus Used.*

United States virus .....	132
Harris .....	98

TABLE 58.

*A List of the Names, Sex, Age and County of All Persons Who Have Taken the "Pasteur Treatment" to Prevent Rabies up to October 1, 1914.*

NAME.	Age.	Sex.	County.
Thelma Deputy.....	7	Female	Marion.
Mrs. Marie Cochran.....	23	Female	Marion.
Mrs. W. T. Richardson.....	52	Female	Marion.
Charles Richart.....	14	Male	Marion.
Theodore Richart.....	12	Male	Marion.
Cora Graff.....	7	Female	Wayne.
Frederick Graff.....	4	Male	Wayne.
Clifford Graff.....	2	Male	Wayne.
Albert Lynch.....	13	Male	Marion.
Mr. Howard Webb.....	31	Male	Fayette.
John Webb.....	7	Male	Fayette.
Earl Webb.....	4	Male	Fayette.
Mrs. Howard Webb.....	28	Female	Fayette.
Mina Sweeten.....	6	Female	Vanderburgh.
Mrs. E. R. Berry.....	49	Female	Marion.
Leslie Berry.....	12	Male	Marion.
Jesse Ott Haynes.....	5	Male	Marion.
Mrs. Margaret Sullivan.....	39	Female	Vigo.
Mr. Jeremiah Sullivan.....	44	Male	Vigo.
Mr. A. M. Kieffaber.....	48	Male	Owen.
Mrs. M. F. Forthoffer.....	27	Female	Vigo.
Mrs. Anna Haynes.....	42	Female	Marion.
Mildred Heim.....	8	Female	Marion.
Evelyn Heim.....	19 Mo.	Female	Marion.
Henry Heim.....	10	Male	Marion.
Bessie Colbert.....	2	Female	Monroe.
Harlan Podlow.....	2	Male	Marion.
Blyth E. Lamb.....	22	Male	Pike.
Blanche Kincaid.....	10	Female	Howard.
William Black.....	6	Male	Wayne.
Samuel Jackson.....	5	Male	Clay.
Edna Hutchison.....	6	Female	Marion.
Leah Percifield.....	4	Female	Bartholomew.
Charles Myers.....	12	Male	Henry.
Elfrieda Dickhaut.....	5	Female	Posey.
Fred Johnson.....	12	Male	Marion.
Royce Thomas.....	13	Male	Vigo.
Mrs. M. C. Thomas.....	32	Female	Vigo.
Grace Thomas.....	13	Female	Vigo.
Charles Thomas.....	12	Male	Vigo.
Louise Thomas.....	10	Female	Vigo.
Joseph Thomas.....	9	Male	Vigo.
Richard Thomas.....	6	Male	Vigo.
Alma Kelshaw.....	11	Female	Knox.
Mr. Edward Wurgler.....	22	Male	Marion.
Mrs. Ruth Wurgler.....	21	Female	Marion.
Mr. George Rose.....	27	Male	Marion.
Mrs. Nelle McGlenn.....	25	Female	Marion.
Mrs. D. Rose.....	59	Female	Marion.
Ellis Glenn.....	10	Male	Vigo.
Agnes Glenn.....	12	Female	Vigo.
Mr. L. M. Kelshaw.....	58	Male	Knox.
Willard Kelshaw.....	16	Male	Knox.
Jason L. Kelshaw.....	7	Male	Knox.
Arley Hedge.....	7	Male	Marion.
Rudolph Crandall.....	12	Male	Wayne.
Rhea Crandall.....	9	Female	Wayne.
Willard Crandall.....	6	Male	Wayne.
Arthur Dixon.....	12	Male	Wayne.
William Kern Davis.....	10	Male	Marion.
Mr. W. F. Smith.....	24	Male	Marion.
Mrs. Clara Smith.....	23	Female	Marion.
Clyde Hepler.....	5	Male	Vigo.
Wesley Hepler.....	11	Male	Vigo.
Victor Hepler.....	12	Male	Vigo.
Mr. W. Hepler.....	38	Male	Vigo.
Mrs. Millie Hepler.....	34	Female	Vigo.
Earl McDaniels.....	15	Male	Rush.
Mr. W. H. Addison.....	26	Male	Shelby.
Mr. W. F. Poston.....	22	Male	Shelby.
Helen Ernsting.....	5	Female	Marion.
Gordon Lee.....	15	Male	Vigo.
Mr. D. L. Collins.....	61	Male	Shelby.
Mr. W. Ernsting.....	44	Male	Marion.
Mrs. B. Richardson.....	38	Female	Marion.

TABLE 58—Continued.

NAME.	Age.	Sex.	County.
Mr. L. E. Short	48	Male	Marion.
Mr. P. Smith	23	Male	Marion.
Luke Sweeney	10	Male	Vigo.
Mr. A. V. Bradfield	52	Male	Vigo.
Mr. A. J. Eckert	19	Male	Gibson.
Elmer Patman	10	Male	Marion.
Freida Klinge	12	Female	Marion.
Fred Neuman	12	Male	Marion.
Mr. Fred Hahn	26	Male	Ripley.
Mr. Harvey Hollar	33	Male	Lawrence.
Everett Hollar	11	Male	Lawrence.
Lexey Hollar	6	Male	Lawrence.
Mr. Fred Masten	44	Male	Putnam.
Mr. Luther Pruitt	20	Male	Hendricks.
Robert Thompson	9	Male	Jefferson.
Mr. Harvey Huff	32	Male	Marion.
Mr. Otto Huff	30	Male	Marion.
Mr. A. C. Brewer	37	Male	Hendricks.
Urey Johnson	15	Male	Martin.
Mamie Brock	9	Female	Rush.
Florence Martin	10	Female	Rush.
Opal Dishinger	10	Female	Rush.
Adona Price	5	Female	Vigo.
Mr. J. A. Suhling	40	Male	Gibson.
Noah Everett	22	Male	Gibson.
John Allen	13	Male	Gibson.
Arthur Allen	7	Male	Gibson.
William L. Drury	9	Male	Marion.
Mrs. Anna Schaffer	59	Female	Marion.
Miss Tillie Grossman	20	Female	Miami.
Mr. Leslie Drury	31	Male	Marion.
Leslie Drury	5	Male	Marion.
Aldyth Drury	8	Female	Marion.
Herman Drury	2	Male	Marion.
Miss Talitha Gerlach	18	Female	Marion.
Gladys West	7	Female	Marion.
Earl West	4	Male	Marion.
Ray Krusan	17	Male	Vigo.
Mr. C. D. Hauger	38	Male	Sullivan.
Mr. A. F. Davis	40	Male	Lawrence.
Mrs. A. F. Davis	32	Female	Lawrence.
Atha Davis	15	Female	Lawrence.
Opal Lane	5	Female	Vigo.
Helen Bing	6	Female	Vigo.
Elsie McMahon	6	Female	Dearborn.
Helen Curry	7	Female	Jefferson.
Louis Haverly	7	Male	Lawrence.
William Haverly	10	Male	Lawrence.
Oscar Haverly	15	Male	Lawrence.
Mr. William Haverly	39	Male	Lawrence.
Mrs. William Haverly	38	Female	Lawrence.
Mr. T. J. Stewart	57	Male	Rush.
Gertrude Shields	7	Female	Rush.
Mr. Bethel Hinchman	29	Male	Rush.
Mrs. Millie Newby	36	Female	Vigo.
Clarence Newby	13	Male	Vigo.
Sylvia Sperling	10	Female	Rush.
Herman Schwear	5	Male	Marion.
Mr. R. C. Cummins	32	Male	Henry.
Eva Gully	4	Female	Vigo.
Stella Church	15	Female	Vigo.
Flora D. Brenton	7	Female	Marion.
Mrs. J. A. Kirk	39	Female	Marion.
Mr. J. A. Kirk	49	Male	Marion.
Mr. Thomas Dunn	70	Male	Sullivan.
Mrs. Catherine Hedge	38	Female	Marion.
Donald Hedge	6	Male	Marion.
Dorthea Davis	4	Female	Marion.
Waldemar Wandtke	8	Male	Knox.
Mr. F. A. Walke	30	Male	Rush.
Curtis Beaty	14	Male	Jennings.
Mr. O. Beaty	42	Male	Jennings.
Robert Leusing	4	Male	Vigo.
Jack Beckett	21 1/2	Male	Sullivan.
Frieda Moore	5	Female	Vigo.
Earl Richardson	14	Male	Vigo.
Mr. Harry Thomas	37	Male	Madison.
Mrs. Harry Thomas	33	Female	Madison.
Mr. Charles Burgett	32	Male	Vigo.

TABLE 58—Continued.

NAME.	Age.	Sex.	County.
Jack Draper Eward.....	3	Male	Decatur.
Mr. George Tumulty.....	46	Male	Decatur.
Thurston Evans.....	8	Male	Madison.
Wayne Liston.....	11	Male	Vigo.
Hornce Ertou.....	17	Male	Johnson.
Mr. John Mohler.....	33	Male	Jasper.
Timothy Hurley.....	7	Male	Madison.
Walter Graham.....	20	Male	Madison.
Mrs. Sarah Waller.....	42	Female	Henry.
Theodore Waller.....	15	Female	Henry.
Mrs. Mabel Smith.....	33	Female	Madison.
Mr. G. Smith.....	33	Male	Madison.
Mr. A. G. Hughes.....	32	Male	Madison.
Mrs. B. F. Senior.....	20	Female	Marion.
Mrs. W. Shea.....	27	Female	Marion.
Laura E. Shea.....	8	Female	Marion.
Earl Palmer.....	13	Male	Madison.
Mrs. G. A. Vaughn.....	21	Female	Henry.
Mr. O. T. Vaughn.....	22	Male	Henry.
Mrs. E. E. Locke.....	38	Female	Henry.
Frank Lines.....	5	Male	Marion.
Russell Richey.....	11	Male	Vigo.
Harold Winfield Campbell.....	3	Male	Madison.
Marie Sexton.....	11	Female	Monroe.
Leon Sexton.....	4	Male	Monroe.
William Peters.....	11	Male	Marion.
Mrs. Arthur Herrick.....	29	Female	Jasper.
Jesse Herrick.....	12	Male	Jasper.
Murlie Herrick.....	9	Female	Jasper.
Margaret Herrick.....	5	Female	Jasper.
Clarence Herrick.....	2	Male	Jasper.
Mrs. L. Gross.....	49	Female	Marion.
Miss Ina Gross.....	28	Female	Marion.
Joseph Donahue.....	13	Male	Tippicanoe.
Louis Overholts.....	17	Male	Vigo.
Ether Francis Geiss.....	5	Female	Rush.
Garnet Findling.....	3	Male	Hamilton.
Loyd Foust.....	17	Male	Hamilton.
Andrew Scudder.....	8	Male	Jefferson.
Allene Scudder.....	4	Female	Jefferson.
John W. Schmidt.....	4	Male	Vigo.
Norma Leek.....	6	Female	Vigo.
Helen Pearson.....	5	Female	Vigo.
Wilden Amos.....	6	Male	Shelby.
Kerran Amos.....	2	Male	Shelby.
Mr. Wm. Fishbein.....	41	Male	Marion.
Samuel Kaplan.....	12	Male	Marion.
Mr. Wm. Brown.....	64	Male	Henry.
Sadie Fishbein.....	6	Female	Marion.
Evelyn Harvey.....	5	Female	Marion.
Cyril Harvey.....	7	Male	Marion.
Edward Gettings.....	12	Male	Tippicanoe.
Mrs. M. M. Adolff.....	28	Female	Floyd.
Tom Jefford.....	20	Male	Jennings.
Dierdre Kennedy.....	7	Female	Marion.
Wendell Webb.....	8	Male	Gibson.
Ralph Avery.....	11	Male	Shelby.
Mr. C. H. Bush.....	46	Male	Marion.
Violet Goldsburly.....	9	Female	Pulaski.
Mr. A. Hauersperger.....	22	Male	Jennings.
Mrs. Emma V. Green.....	49	Female	Hendricks.
Mrs. Anna Layton.....	16	Female	Jefferson.
Mrs. Allie Wambaugh.....	54	Female	Marion.
Edna Lyle.....	15	Female	Jefferson.
Mr. G. O. Jackson.....	30	Male	Marion.
Baldwin H. Jackson.....	5	Male	Marion.
Lois Jackson.....	22 Mo.	Female	Marion.
Eleanor Reese.....	11	Female	Marion.
Vera Richardson.....	11	Female	Rush.
Georgia Richardson.....	8	Female	Rush.
Alden Richardson.....	6	Male	Rush.
Charles W. Reese.....	4	Male	Marion.
Edna Thomas.....	7	Female	Marion.
Miss Muri Amy.....	15	Female	Harrison.
Harold Craig.....	16	Male	Marion.
Mr. W. C. Johnson.....	27	Male	Martin.



TABLE 60.

*Showing Number of Cases of Rabies and Month in Which First Case Appeared in Each County, 1907.*

COUNTY.	Number Cases.	Month.	COUNTY.	Number Cases.	Month.
Adams.....			Lawrence.....		
Allen.....	1	January.	Madison.....		
Bartholomew.....	2	April.	Marion.....	3	January.
Benton.....			Marshall.....		
Blackford.....			Martin.....		
Boone.....			Miami.....		
Brown.....			Monroe.....		
Carroll.....			Montgomery.....		
Cass.....			Morgan.....		
Clark.....			Newton.....		
Clay.....			Noble.....		
Clinton.....	1	March.	Ohio.....		
Crawford.....			Orange.....	1	June.
Daviess.....			Owen.....		
Dearborn.....			Parke.....		
Decatur.....			Perry.....		
DeKalb.....			Pike.....		
Delaware.....			Porter.....		
Dubois.....			Posey.....		
Elkhart.....			Pulaski.....		
Fayette.....			Putnam.....	2	March.
Floyd.....			Randolph.....		
Fountain.....			Ripley.....		
Franklin.....			Rush.....		
Fulton.....			Scott.....		
Gibson.....			Shelby.....		
Grant.....			Spencer.....		
Greene.....	1	August.	Starke.....		
Hamilton.....	1	August.	Steuben.....		
Hancock.....	1	April.	St. Joseph.....		
Harrison.....			Sullivan.....		
Hendricks.....			Switzerland.....		
Henry.....			Tippecanoe.....		
Howard.....			Tipton.....		
Huntington.....			Union.....		
Jackson.....			Vanderburgh.....		
Jasper.....			Vermillion.....		
Jay.....			Vigo.....		
Jefferson.....			Wabash.....		
Jennings.....			Warren.....		
Johnson.....			Warrick.....		
Knox.....			Washington.....		
Kosciusko.....			Wayne.....	1	August.
Lagrange.....			Wells.....		
Lake.....			White.....		
Laporte.....			Whitley.....		

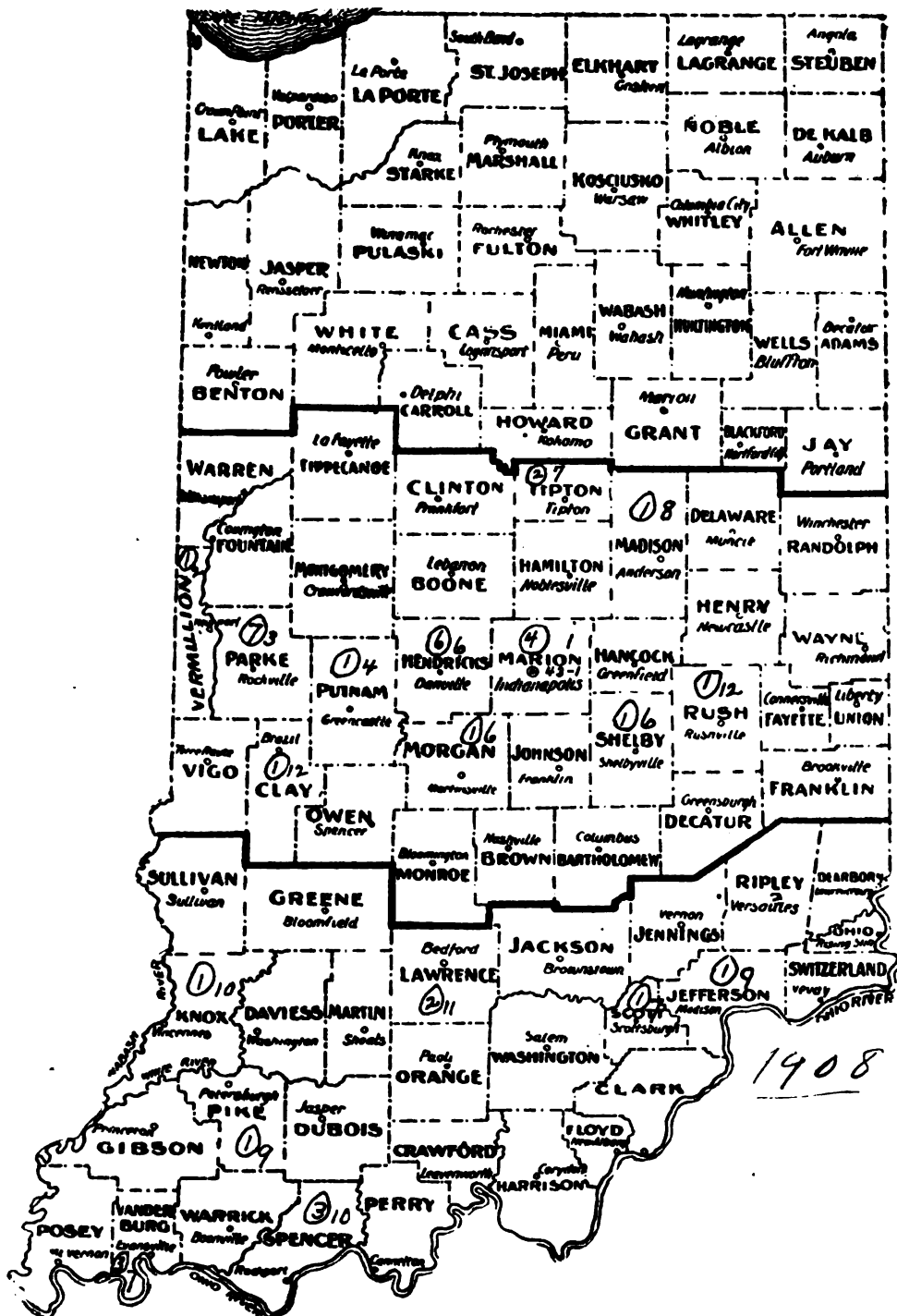


The figure outside of circle indicates the month in which the first cases occurred. The number inside the circle indicates the total number of cases in that county for that year.

TABLE 61.

*Showing Number of Cases of Rabies and Month in Which First Case Appeared in Each County, 1908.*

COUNTY.	Number Cases.	Month.	COUNTY.	Number Cases.	Month.
Adams.....			Lawrence.....	2	November.
Allen.....			Madison.....	1	August.
Bartholomew.....			Marion.....	43	January.
Benton.....			Marshall.....		
Blackford.....			Martin.....		
Boone.....			Miami.....		
Brown.....			Monroe.....		
Carroll.....			Montgomery.....		
Cass.....			Morgan.....	1	June.
Clark.....			Newton.....		
Clay.....	1	December.	Noble.....		
Clinton.....			Ohio.....		
Crawford.....			Orange.....		
Daviess.....			Owen.....	5	March.
Dearborn.....			Parke.....		
Decatur.....			Perry.....		September.
Dekalb.....			Pike.....		
Delaware.....			Porter.....		
Dubois.....			Posey.....		
Elkhart.....			Pulaski.....	1	April.
Fayette.....			Putnam.....		
Floyd.....			Randolph.....		
Fountain.....			Ripley.....		
Franklin.....			Rush.....	1	July.
Fulton.....			Scott.....	1	June.
Gibson.....			Shelby.....	3	October.
Grant.....			Spencer.....		
Greene.....			Starke.....		
Hamilton.....	1	December.	Steuben.....		
Hancock.....			St. Joseph.....		
Harrison.....	6	June.	Sullivan.....		
Hendricks.....			Switzerland.....		
Henry.....			Tipppecanoe.....		
Howard.....			Tipton.....	2	July.
Huntington.....			Union.....		
Jackson.....			Vanderburgh.....	3	July.
Jasper.....			Vermillion.....	1	December.
Jay.....			Vigo.....		
Jefferson.....	1	September.	Wabash.....		
Jennings.....			Warren.....		
Johnson.....			Warrick.....		
Knox.....	1	October.	Washington.....		
Kosciusko.....			Wayne.....		
Lagrange.....	1	February.	Wells.....		
Lake.....			White.....		
Laporte.....			Whitley.....		



The figure outside of circle indicates the month in which the first cases occurred. The number inside the circle indicates the total number of cases in that county for that year.

TABLE 62.

*Showing Number of Cases of Rabies and Month in Which First Case Appeared in Each County, 1909.*

COUNTY.	Number Cases.	Month.	COUNTY.	Number Cases.	Month.
Adams.....			Lawrence.....	4	January.
Allen.....			Madison.....		
Bartholomew.....			Marion.....	19	January.
Benton.....			Marshall.....		
Blackford.....			Martin.....		
Boone.....	1	February.	Miami.....		
Brown.....			Monroe.....	1	May.
Carroll.....	1	December.	Montgomery.....		
Cass.....			Morgan.....	2	November.
Clark.....			Newton.....		
Clay.....	3	January.	Noble.....	2	March.
Clinton.....			Ohio.....		
Crawford.....	1	May.	Orange.....		
Davies.....			Owen.....		
Dearborn.....			Parke.....		
Decatur.....	1	December.	Perry.....		
Dekalb.....			Pike.....	1	May.
Delaware.....			Porter.....		
Dubois.....	1	April.	Posey.....		
Elkhart.....			Pulaski.....		
Fayette.....			Putnam.....	2	June.
Floyd.....			Randolph.....		
Fountain.....			Ripley.....		
Franklin.....			Rush.....		
Fulton.....			Scott.....		
Gibson.....			Shelby.....		
Grant.....			Spencer.....		
Greene.....	2	January.	Starke.....	1	January.
Hamilton.....	3	September.	Steuben.....		
Hancock.....			St. Joseph.....	5	March.
Harrison.....			Sullivan.....		
Hendricks.....	2	January.	Switzerland.....		
Henry.....			Tippecanoe.....		
Howard.....			Tipton.....		
Huntington.....	4	September.	Union.....	1	December.
Jackson.....	2	March.	Vanderburgh.....		
Jasper.....			Vermillion.....	3	July.
Jay.....			Vigo.....	1	July.
Jefferson.....	1	August.	Wabash.....		
Jennings.....			Warren.....		
Johnson.....	1	June.	Warrick.....		
Knox.....			Washington.....		
Kosciusko.....			Wayne.....		
Lagrange.....	1	May.	Wells.....		
Lake.....	1	June.	White.....		
Laporte.....	3	June.	Whitley.....		



TABLE 63.

*Showing Number of Cases of Rabies and Month in Which First Case Appeared in Each County, 1910.*

COUNTY.	Number Cases.	Month.	COUNTY.	Number Cases.	Month
Adams.....			Lawrence.....		
Allen.....			Madison.....	3	August.
Bartholomew.....			Marion.....	3	May.
Benton.....	1	April.	Marshall.....		
Blackford.....			Martin.....		
Boone.....			Miami.....	1	December.
Brown.....			Monroe.....		
Carroll.....			Montgomery.....		
Cass.....			Morgan.....	2	January.
Clark.....	2	October.	Newton.....		
Clay.....			Noble.....	1	February.
Clinton.....	1	May.	Ohio.....		
Crawford.....			Orange.....		
Daviess.....			Owen.....	1	December.
Dearborn.....	1	August.	Parke.....		
Decatur.....	3	May.	Perry.....		
DeKalb.....	1	January.	Pike.....		
Delaware.....	1	June.	Porter.....	1	September.
Dubois.....			Posey.....		
Elkhart.....			Pulaski.....		
Fayette.....			Putnam.....		
Floyd.....			Randolph.....		
Fountain.....			Ripley.....	3	April.
Franklin.....			Rush.....	1	January.
Fulton.....			Scott.....	4	June.
Gibson.....			Shelby.....	1	September.
Grant.....			Spencer.....		
Greene.....	1	March.	Starke.....		
Hamilton.....	2	April.	Steuben.....		
Hancock.....	1	April.	St. Joseph.....	3	July.
Harrison.....	1	February.	Sullivan.....		
Hendricks.....	1	January.	Switzerland.....		
Henry.....			Tiptecanoe.....	7	May.
Howard.....	9	May.	Tipton.....	1	July.
Huntington.....	2	February.	Union.....		
Jackson.....	1	June.	Vanderburgh.....	1	June.
Jasper.....			Vermillion.....		
Jay.....			Vigo.....	1	November.
Jefferson.....			Wabash.....		
Jennings.....	1	June.	Warren.....		
Johnson.....	1	December.	Warrick.....	1	October.
Knox.....			Washington.....		
Kosciusko.....			Wayne.....	1	May.
Lagrange.....			Wells.....		
Lake.....	1	September.	White.....		
Laporte.....	5	February.	Whitley.....		



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TABLE 64.

Showing Number of Cases of Rabies and Month in Which First Case Appeared in Each County, 1811.

COUNTY	Number of Cases.	Month.	COUNTY	Number of Cases.	Month.
Adams			Lawrence		
Adair			Madison	1	January.
Adams	6	August	Marion	2	February.
Adams			Marshall		
Adams			Marshall	1	September.
Adams	1	November.	Marshall	1	April.
Adams			Marshall	1	September.
Adams	2	February.	Marshall		
Adams	2	November.	Marshall		
Adams	2	February.	Marshall		
Adams			Marshall	1	June.
Adams	3	January.	Marshall		
Adams	1	May.	Marshall		
Adams	1	May.	Marshall	1	April.
Adams	2	April.	Marshall		
Adams	2	January.	Marshall		
Adams			Marshall	1	September.
Adams	6	April.	Marshall		
Adams			Marshall	1	June.
Adams			Marshall		
Adams			Marshall		
Adams			Marshall	2	July.
Adams	1	November.	Marshall	4	June.
Adams			Marshall		
Adams			Marshall		
Adams	1	May.	Marshall		
Adams			Marshall		
Adams	1	February.	Marshall		
Adams	1	February.	Marshall	6	January.
Adams	4	January.	Marshall	3	March.
Adams	2	August.	Marshall	2	February.
Adams	1	March.	Marshall	1	May.
Adams	3	March.	Marshall	3	May.
Adams			Marshall		
Adams	1	January.	Marshall	2	September.
Adams	3	April.	Marshall	2	February.
Adams			Marshall	7	April.
Adams	3	January.	Marshall		
Adams	7	February.	Marshall		
Adams			Marshall		
Adams			Marshall	3	May.
Adams			Marshall	3	November.
Adams			Marshall		
Adams			Marshall	7	February.
Adams	1	January.	Marshall	4	September.



TABLE 65.

*Showing Number of Cases of Rabies and Month in Which First Case Appeared in Each County, 1912.*

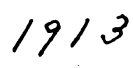
COUNTY.	Number Cases.	Month.	COUNTY.	Number Cases.	Month.
Adams.....			Lawrence.....	1	October.
Allen.....			Madison.....	1	April.
Bartholomew.....	5	February.	Marion.....	32	January.
Benton.....	1	August.	Marshall.....		
Blackford.....			Martin.....		
Boone.....	4	March.	Miami.....		
Brown.....	1	July.	Monroe.....	1	November.
Carroll.....	1	May.	Montgomery.....	2	May.
Cass.....	3	January.	Morgan.....		
Clark.....			Newton.....		
Clay.....	1	March.	Noble.....		
Clinton.....	6	February.	Ohio.....		
Crawford.....			Orange.....	1	March.
Daviess.....			Owen.....	1	September.
Dearborn.....	5	March.	Parke.....	3	April.
Decatur.....	1	June.	Perry.....		
DeKalb.....			Pike.....		
Delaware.....	1	June.	Porter.....	1	July.
Dubois.....	2	January.	Posey.....	6	March.
Elkhart.....	1	October.	Pulaski.....		
Fayette.....	1	September.	Putnam.....	1	December.
Floyd.....			Randolph.....	1	January.
Fountain.....	2	June.	Ripley.....	2	March.
Franklin.....	3	September.	Rush.....	3	January.
Fulton.....			Scott.....		
Gibson.....			Shelby.....	3	January.
Grant.....			Spencer.....		
Greene.....	2	January.	Starke.....		
Hamilton.....	13	January.	Steuben.....		
Hancock.....	4	April.	St. Joseph.....		
Harrison.....	1	January.	Sullivan.....	6	May.
Hendricks.....	3	February.	Switzerland.....	2	June.
Henry.....	2	November.	Tipperance.....	4	April.
Howard.....			Tipton.....	1	April.
Huntington.....	1	September.	Union.....		
Jackson.....	3	February.	Vanderburgh.....		
Jasper.....	1	May.	Vermillion.....	2	July.
Jay.....			Vigo.....	4	March.
Jefferson.....	2	April.	Wabash.....		
Jennings.....	4	March.	Warren.....		
Johnson.....	1	January.	Warrick.....		
Knox.....	4	January.	Washington.....		
Kosciusko.....	1	June.	Wayne.....	14	January.
Lagrange.....			Wells.....		
Lake.....	3	March.	White.....	1	September.
Laporte.....	1	January.	Whitley.....	1	June.



TABLE 66.

*Showing Number of Cases of Rabies and Month in Which First Case Appeared in Each Month, 1913.*

COUNTY.	Number Cases.	Month.	COUNTY.	Number Cases.	Month.
Adams.....			Lawrence.....	10	March.
Allen.....			Madison.....		
Bartholomew.....	10	February.	Marion.....	40	January.
Benton.....			Marshall.....		
Blackford.....			Martin.....		
Boone.....	1	December.	Miami.....	1	August.
Brown.....			Monroe.....	10	January.
Carroll.....			Montgomery.....	7	May.
Cass.....	1	May.	Morgan.....	2	June.
Clark.....			Newton.....		
Clay.....	3	October.	Noble.....		
Clinton.....			Ohio.....		
Crawford.....			Orange.....	4	May.
Daviess.....			Owen.....	1	October.
Dearborn.....	3	February.	Parke.....	4	April.
Decatur.....	3	February.	Perry.....		
Dekalb.....			Pike.....	2	October.
Delaware.....			Porter.....		
Dubois.....			Posey.....	6	June.
Elkhart.....			Pulaski.....		
Fayette.....	7	February.	Putnam.....	3	August.
Floyd.....	4	January.	Randolph.....	1	April.
Fountain.....	1	May.	Ripley.....	2	April.
Franklin.....	3	January.	Rush.....	1	December.
Fulton.....			Scott.....	1	April.
Gibson.....	4	April.	Shelby.....	1	December.
Grant.....			Spencer.....		
Greene.....	4	January.	Starke.....		
Hamilton.....			Steuben.....		
Hancock.....	3	February.	St. Joseph.....	2	February.
Harrison.....			Sullivan.....	5	February.
Hendricks.....	2	April.	Switzerland.....	1	August.
Henry.....	8	January.	Tippecanoe.....	1	January.
Howard.....	1	February.	Tipton.....	1	January.
Huntington.....	2	May.	Union.....	2	September.
Jackson.....	4	September.	Vanderburgh.....	5	January.
Jasper.....			Vermillion.....		
Jay.....			Vigo.....	11	February.
Jefferson.....	6	January.	Wabash.....		
Jennings.....			Warren.....		
Johnson.....	1	April.	Warrick.....	3	January.
Knox.....			Washington.....	3	January.
Kosciusko.....			Wayne.....	7	January.
Lagrange.....			Wells.....	1	May.
Lake.....			White.....	1	April.
Laporte.....			Whitley.....		



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# RABIES IN INDIANA FOR NINE YEARS.

For several years there has been a general impression that a great many animals were dying of rabies. The medical profession did not consider seriously this general belief. There was no method to prove or disprove this belief until the discovery of Negri bodies by Negri in 1903. In 1907 the method for examining brains was improved by Williams and Lowden of the New York Research Laboratory. This discovery came soon after the establishment of the bacteriological laboratory of the Indiana State Board of Health. The first positive finding for Negri bodies at the Indiana State Laboratory was made December 1, 1906. In the eight years since that time the following number of brains have been found to contain Negri bodies.

TABLE 67.

*Brains Positive and Percentage Positive, 1906-1914.*

Year.	Brains Pos.	Per Cent. Positive.
1906.....	1	..
1907.....	12	84
1908.....	73	85
1909.....	69	44
1910.....	66	51
1911.....	114	48
1912.....	158	50
1913.....	198	57
1914.....	198	63
Total.....	889	Average 60

It is very interesting to note that the percentage of positives fell from 84 per cent. in 1907 to 63 per cent. in 1914 in spite of the improvements in the method and technic. First there has been a marked improvement in the Harris staining method. The Frothingham impression method of making smears is also a decided help. These two improvements have made diagnoses in uncertain cases easier and more certain.

Making frozen sections of the Gasserian ganglion and staining with polychrome methylene blue has helped a good deal in doubtful cases. The use of guinea pigs instead of rabbits has made the biological test easier, shorter and less expensive. All of these improvements have made laboratory workers less willing to make a positive diagnosis from stained smears alone, desiring to wait for Gasserian ganglion sections or guinea pig injection where the persons bitten were adults. Another cause for higher percentages in

the beginning is that only animals' brains were sent in that had typical clinical rabies. There has been a steady increase in the total number of brains and a steady fall in the percentage positive. One cause for the increase in the total number of brains sent in is that people are more alive to the possible presence of rabies and are therefore not willing to take any chances in view of the ease with which they can obtain laboratory diagnosis.

People are so wrought up over the possibility of rabies in animals dying with symptoms of the disease of the brain and spinal cord that these animals are immediately sent to the laboratory for confirmation or disproof of the suspicion. There is no doubt that the same thing holds true of animals as of human beings, that no absolutely positive diagnosis of rabies can be made from the clinical symptoms without being confirmed by an examination of the brain for Negri bodies.

Another more important cause for the increase in positive brains is due to the fact that rabies has increased both in number of cases and in the territory covered.

The number of brains examined in 1907, which was eighty-two was probably all that were examined in 1907. The total number, 311, in 1914 does not represent the total number of brains examined in Indiana for rabies. Several other laboratories examine a number of brains, some of which are positive, so that the Indiana Board gets no information of the whereabouts of these various cases examined outside of its laboratory. For the proper regulation of quarantine all positive cases should be reported to the State Board of Health.

Dogs and cats are mostly concerned in the spread of rabies, as is shown in the following Table 68:

TABLE 68.

*Showing Kinds of Brains Found Positive, 1906-1914, and Percentage of Each of the Total.*

YEARS.	Dog.	Cat.	Hog.	Horse.	Cow.	Mule.	Sheep.	Human.	Coon.	Fox.	Total.
Up to October 31, 1909....	123	8	9	.....	4	.....	1	.....	.....	.....	145
Up to October 31, 1910....	100	1	6	2	3	.....	3	1	.....	.....	118
Up to October 31, 1911....	58	2	2	2	4	.....	.....	.....	.....	.....	68
Up to October 31, 1912....	146	1	1	1	9	.....	.....	.....	.....	.....	158
Up to October 31, 1913....	148	3	2	1	5	.....	.....	.....	.....	.....	159
Up to October 31, 1914....	164	15	3	4	12	1	.....	.....	1	1	201
Total.....	739	30	23	10	37	1	4	1	1	1	847
Percentage of total....	87.0	3.5	2.7	1.18	4.37	.11	.47	.11	.11	.11	.....



Thus we see that dogs are chiefly concerned in the spread and continued epidemics of rabies. This has been conclusively shown in Great Britain, where muzzling and rigid quarantine of all dogs imported has completely eradicated rabies.

No county in Indiana has been absolutely free from rabies from 1906-1914. In many places rabies has been endemic, at times becoming epidemic. The disease has continued to spread in spite of all efforts to control it. The Indiana county quarantine law of 1911 has done good work where there has been co-operation with the health officer. However, an ideal county administration will not eradicate rabies unless there is efficient co-operation with the adjoining counties. But an efficient state administration of the measures to prevent the spread of rabies will not be sufficient unless the adjoining co-operation is present. Thus we see that antirabic measures must be national, international and continental since dogs do not know county, State or national boundaries.

## VARIETIES OF PASTEUR TREATMENT.

### BABES, TRAITE, DE LA RAGE.

The Classic Pasteur method is founded on the experiments of Pasteur, Chamberlain and Rous concerning the effect of desiccation on the virulence of the cord. The cords were suspended over KOH at 23°C. Under the combined action of the drying and oxygen the virulence is gradually lost, so that after five or six days the virus will not cause rabies in animals even when injected sub-durally.

#### *Infectivity of Virus for Rabbits.*

Pasteur Institutes.	Rabbits' Weight.	Death Occurs.
Paris .....	2,000 grams	11 to 12 days
Versovle .....	2,500 grams	8 to 9 days
Breslau .....	1,800 grams	7 to 9 days
New York .....	1,800 grams	7 to 9 days
Odessa .....	1,800 grams	7 to 9 days
Jsaman .....	1,800 grams	7 to 9 days
Isamara .....		6 to 7 days
Bukarest .....		6 to 9 days
Kiev .....		6 to 9 days
Moscow .....		6 to 9 days
Perm .....		6 to 9 days

*Effect of Desiccation on the Infectivity of the Rabies' Fixed Virus.*

Pasteur Institutes.	Days Dried and Loss of Infectivity.
Paris—Petersburg .....	5 to 6 days
Bucharest .....	4 days
Versovie, Moscow, New York, Tiflis and Odessa.....	6 days
Isamara .....	4 to 5 days
Kiev, Saraton .....	6 to 7 days
Tomsk .....	9 days

*Amount of Cord Used for Each Treatment.*

Pasteur Institutes.	Length of Cord.
Bukarest .....	2 to 8 m.m.
Paris .....	1.2 to 5 m.m.
Versovie .....	5 to 6 m.m.
Moscow .....	1 m.m.
Chakow, Ufa and Saratow.....	2 m.m.
Odessa, New York and Tiflis.....	3 m.m.
Petersburg .....	1.4 m.m.
Constantinople .....	5 m.m.

*Temperature at Which Cords are Dessicated.*

Pasteur Institutes.	Temperature.
Tomsk .....	12° C.
Kiev and Versovie .....	12° C.
Odessa and Ufa .....	18° C.
Petersburg and Samara .....	20° C.
Breslau, New York, Tiflis, Saratow and Perm.....	22° C.
Paris, Bukarest and Chakow .....	23° C.
Coracovie .....	7 to 11 and 12 to 16° C.

**HÖGYES DILUTION METHOD—FRESH CORD.**

DAY OF INOCULATION.	Dilution.		Quantity.	
	Morning.	Evening.	Morning.	Evening.
First day.....	1/10,000	1/6,000	3 c. m.	3 c. m.
Second day.....	1/5,000	1/2,000	3 c. m.	2 c. m.
Third day.....	1/2,000	1/1,000	2 c. m.	1½ c. m.
Fourth day.....	1/1,000	1/500	1½ c. m.	1 c. m.
Fifth day.....	1/200	.....	1 c. m.	.....
Sixth day.....	1/6,000	1/2,000	3 c. m.	2 c. m.
Seventh day.....	1/2,000	1/1,000	2 c. m.	1½ c. m.
Eighth day.....	1/1,000	1/500	1½ c. m.	1 c. m.
Ninth day.....	1/200	.....	1 c. m.	.....
Tenth day.....	1/6,000	1/2,000	3 c. m.	2 c. m.
Eleventh day.....	1/2,000	1/1,000	2 c. m.	1½ c. m.
Twelfth day.....	1/1,000	1/500	1½ c. m.	1 c. m.
Thirteenth day.....	1/200	.....	1 c. m.	.....
Fourteenth day.....	1/100	.....	1 c. m.	.....

## DILUTION METHOD OF HÖGYES.

## INFECTIVITY FOR RABBITS.

*Subdural Infection.*

Dilution.	Killed Rabbits.
	Prolonged incubation period.
1/2,000 to 1/250	Those corresponded to cords dried in from 8 to 3 days.
1/200 to 1/10	Five to six days equal to fresh undiluted cord.

## METHOD OF BABES—PUSCARIU.

Time Heated.	Degrees.	Kill.	No. Days.
40 minutes.....	58°C.	No.	..
32 minutes.....	58°C.	Yes.	20
24 minutes.....	58°C.	Yes.	16
24 minutes.....	58°C.	Yes.	16
16 minutes.....	58°C.	Yes.	12
8 minutes.....	58°C.	Yes.	12
4 minutes.....	58°C.	Yes.	11
2 minutes.....	58°C.	Yes.	9
10 minutes.....	80, 70 & 60°C.	No.	..
10 minutes.....	50°C.	Yes.	11 to 20
10 minutes.....	50°C.	Yes.	11
10 minutes.....	45°C.	Yes.	11
10 minutes.....	40°C.	Yes.	10
10 minutes.....	35°C.	Yes.	9
10 minutes.....	30°C.	Yes.	9

## ROUMANIAN METHOD.

## BABES.

The author believes that the classic Pasteur method has many failures and he has constantly tried to modify the method so as to exclude the failures.

Fixed virus contains the following elements:

1. The virus.
2. The toxins.
3. The vaccinating substance.
4. The nerve and brain tissue.
5. The serum.

Babes' experiments have established the following facts:

1. Cords dried in the usual way do not confer immunity in severe cases.
2. One can, in from one to two days, obtain a virulent and effective cord.

3. The less the virus is fixed the fresher it is and the larger the doses used the larger number of vaccinating units it contains and the more efficient it is.

4. Fixed virus killed by heat is more efficient than that killed by drying.

5. Fixed virus cords contain toxins and there exists a parallel between the toxins and the vaccinating power.

6. The serum of animals vaccinated against rabies will confer a passive immunity; it will neutralize in vitro the rabic virus.

7. Brain substance and its filtrate will reinforce the antirabic immunizing substance.

#### METHOD OF ROUMANIA.

1. The fixed virus is further strengthened by passage through guinea pigs. For severe cases larger doses of slightly attenuated virus is used after preparing the patient by injection of attenuated fixed virus.

2. Also use serum of animals highly immunized against street rabies.

3. Also use fixed virus attenuated by heat.

The passing of the virus through a series of guinea pigs is made when it shows a tendency to degenerate, e. g. shows prolongation of incubation period. Just enough heat is used to kill the virus and no more. This makes a very efficient virus with an increased infectivity.

The serum of hogs vaccinated against street virus and of those which are very resistant to this infection, is used in doses of from 10 to 50 grams. A mixture of fixed virus and antirabic serum is no good for curative or preventive purposes.

#### METHOD OF USING THE SERUM.

The serum should be used alone either at the beginning of or at the end of the treatment. The use of the serum before beginning the treatment of the virus is best, for then we can begin with a much stronger virus. The use of the serum at the end of the treatment is for passive immunization until the organism can obtain an active immunization. The serum is only used in the cases where the bites are most severe or in cases where the persons who come for treatment do not come for a long time after the bite.

## THE THREE PERIODS OF THE ROUMANIAN METHOD.

## FIRST PERIOD.

Amount injected 3-2 c.c.

Dilution 1-10.

1. Bad bites on hands or face 56 treated and 14 died.  
Untreated deaths 60 to 90 per cent.  
Treated deaths 64 per cent.

Days of Treatment.	Days of Drying the Cord.
1.....	11- 9-8
2.....	10- 7-5
3.....	10- 6-3
4.....	8- 4-2
5.....	12-11
6.....	0- 9
7.....	8- 7
	Etc.

## SECOND PERIOD.

*One Hundred and Sixteen Persons Treated, with Seventeen Deaths.*

Days of Treatment.	Days of Drying the Cord.
1.....	12- 8-4
2.....	10.8-64-3
3.....	8- 6-3
4.....	00.9- 9-
	Etc.

## THIRD PERIOD.

*Twenty-five Persons Treated, With No Deaths.*

Days of Treatment.	Days of Drying the Cord.
1.....	13
2.....	13
3.....	13
4.....	Fresh cord
5.....	Fresh cord
6.....	10 grams antirabic serum
7.....	8
8.....	20 grams antirabic serum
	Etc.

## FOURTH PERIOD.

Heated cord was used as well as serum and desiccated cord.

## FIFTH PERIOD.

Large quantities of heated virus were used, with one death.

## SIXTH PERIOD.

Day of Treatment.	Cord.
1.....	Desiccated 2 days
1.....	Heated to 50°C.
3.....	Heated to 45°C.
4.....	Heated to 40°C.
5.....	10 grams antirabic serum

## SEVENTH PERIOD.—1906 ON.

1.....	Dried 6 days
2.....	Dried 2-1 days
3.....	10 c.c. given heated to 80°C. & 50°C.
4.....	10 c.c. given heated to 80°C. & 50°C.
5.....	10 c.c. of antirabic serum

Treatment lasts 20 to 30 days.

Two or three days after treatment is finished the antirabic serum is injected.

With the last four of these treatments the author has had no deaths.

Purpose for which the serum is used :

1. To attenuate the virulent emulsion.
2. To produce a positive immunity.
3. To assist the body in the production of antibodies at the end of the treatment.
4. To prevent the paralysis that sometimes occurs during the treatment.

## DIFFERENT METHODS OF IMMUNIZATION AGAINST RABIES.

## A. Active immunization.

- a. Inoculation of unchanged fixed virus (Method, Galtier, Rous, Nocard in herbivora.)
- b. Into the peritoneum.
- c. By ingestion (Babes & Fermi).
- d. Into the rectum (Remlinger).
- e. Under the skin (Ferran).

B. Inoculation of diluted fixed virus (Höygyes), and of filtered virus (Remlinger).

## C. Inoculation of attenuated virus.

- a. Passage through monkeys (Pasteur).
- b. By desiccation (Pasteur).
- c. By heating (Babes & Puscariu).

**D. Inoculation of sterilized fixed virus.**

- a. By addition of gastric juice (Ticconi & Centanni).
- b. By addition of phenol (Fermi).
- c. By desiccation (Pasteur, Burdock & Babes).
- d. By long immersion in glycerine (Rodet & Galavielle).
- e. By heat (Babes).
- f. By grinding (Heller).

**E. Inoculation of normal nerve tissue (Babes).**

**VIRULENCE OF FIXED VIRUS.**

KOZEWALOW.

Centralbl. f. Bkt. Orig. Vol. 73, pg. 59. 1914.

It has been held for a long time that fixed virus given subcutaneously as in the Pasteur method was absolutely harmless for man, that the virus was changed in the rabbit so that it lost its virulence for man and that it could not grow and produce disease in man.

Netch injected himself with the cord of a rabbit dead of fixed virus without harm, while a control rabbit died. Proescher of New York injected two people in the back with fresh virus without any harm. Marx's experiments on apes seem to be an argument against the virulence for man. He injected fixed virus into the muscles without harm; street virus killed in every instance.

With the belief that fixed virus is harmless for man many Pasteur institutes used fresh or only slightly weakened fixed virus. Ferran in Barcelona as well as his students use fresh fixed virus for treatment. Babes uses, in all of his cases where the patient is badly bitten, fresh virus. German Pasteur institutes (Berlin, Breslau) use a very intensive method, which begins with a three-day cord, on the second day a two-day cord and on the third day a one-day cord. In the course of twenty-one days the patients receive a one-day cord eleven times.

In spite of the belief of many that fixed virus is harmless, many cases of paralysis are being reported in people taking the Pasteur treatment. It is mostly a paraplegia of the lower extremities, combined with a paralysis of bladder and rectum. Recovery usually takes place except in cases of an acute ascending paralysis of Landry's type, which usually die. Simons reports 100 paralysis in 211,774 treated cases. Of these eighty-four cases had a history. The paralysis usually occurred early in the treat-

ment. In 50 per cent. of cases there was paralysis of lower extremities with involvement of bladder and rectum; in 42 per cent. in the form of ascending paralysis and in a few cases, as paralysis of facial and other single groups of muscles. In 61.9 per cent. the cases were acute and in 37.7 per cent. chronic, some of which lasted many months.

Most of the people affected were adults. Of the eighty-four the ages of twenty were unknown. Nine cases were under 12 years of age and in fifty-five cases they were 12 years of age. Men were more numerous than women.

Men .....	60
Women .....	10
Sex unknown .....	14
Of the 84 cases 14 died or.....	22.6 per cent. mortality
Of the acute cases .....	68.75 per cent. mortality
Of the chronic cases .....	21.05 per cent. mortality
Of the paraplegia cases .....	8. per cent. mortality
Of the ascending cases .....	41.6 per cent. mortality

Post mortems showed myelitis. No Negri bodies were found. The predisposing factors were: alcoholism, syphilis, neurasthenia. Paralysis occurred with all four of these treatments, most seldom with Höyges dilution method. The incubation period is shorter than with rabies.

*Incubation Period.*

25.59 per cent. in less than 10 days.
62.16 per cent. 11 to 20 days.
12.16 per cent. 21 to 30 days.

Paralysis occurred among persons not bitten by rabid animals as well as among those bitten.

Cases reported by author were five. Of these four were paraplegia and the fifth one paralysis of the N.N. facialis hypoglossi, glossopharyngii. All of the cases recovered. Abramson reported one case of chronic ascending paralysis that died in four weeks.

The Pasteur Institute at Charkow was opened April 20, 1887. In the twenty-six years 39,000 persons were treated. There were ten cases of paralysis, four were reported by Wyssokowitsch, four by Nedrigarlow, one undescribed and one described in this article. Thus, the number of paralysis at the Charkow Institute is .25 per cent. The four cases of Wyssokowitsch recovered and one had paraplegia. Of the four cases of Nedrigarlow and Ostogain three cases were paraplegia of lower extremities with bowel and bladder



involvement. In the fourth case there was a complete paralysis of the lower extremities. In one case the dog did not die which bit the patient. The ninth case in 1903 was one of paraplegia, which recovered.

Characteristics of the fixed virus used at the Charkow Institute were that rabbits injected subdurally with this virus came down in six to seven days and died within eight to nine days. The following dilutions of fixed virus filtered through filter paper were used: one to 1,000 dilution, full virulence. In higher dilutions death occurred in most cases but the incubation period was longer. In dilution of 1 to 200,000 half of the animals died after a long incubation period. With subcutaneous injection of undiluted fixed virus in white mice 67 per cent. died with rabies.

The cord at the Charkow Institute is cut in two and suspended in jars of 1,200 c.c. capacity over 50 grams of KOH at 20°C. The virulence of the dried cord is as follows:

1-day cord, 1 to 100 dilution filtered through filter paper, all died in from 6 to 7 days.

2-day cord, 75 per cent. died. In half of the cases the incubation period was normal, in the other half one day longer.

3-day cord, 15 per cent. died after a long incubation period.

4-day cord, 10 per cent. died after a prolonged incubation period.

5-day cord, all animals lived.

#### METHOD OF TREATMENT OF THE CHARKOW PASTEUR INSTITUTE.

*2 m.m. cord in 3 c.c. salt solution with one treatment each day.*

1st day, 4-day cord	
2d day, 4-day cord	
3d day, 3-day cord	
4th day, 2-day cord	
5th day, 4-day cord	Mild.
6th day, 3-day cord	
7th day, 2-day cord	
8th day, 3-day cord	Moderate.
9th day, 2-day cord	
10th day, 3-day cord	
11th day, 2-day cord	Severe.
12th day, 3-day cord	
13th day, 2-day cord	
14th day, 3-day cord	
15th day, 2-day cord	
16th day, 3-day cord	
17th day, 2-day cord	
18th day, 3-day cord	
19th day, 2-day cord	
20th day, 3-day cord	

The method of treatment was adopted in 1909. Up to that time 6-day and 5-day cords were used. The treatment lasted fourteen days. Between 1903-1913, that is ten years, there were no cases of paralysis. In April, 1913, the first case appeared, a very severe one, which was of acute ascending variety. The patient died. The case is as follows:

Bitten March 29, 1913, by rabid dog. Brain found not to contain Negri bodies. Began treatment March 31, 1913. From the 18th to 20th there was pain and weakness in the legs and a temperature of 37.5C.

April 22d, temperature was 38.6C. Retention of urine, inability to walk steadily, skin sensibility of legs diminished, headache.

April 23d, temperature, 39.5C. Pulse, 140; respiration, 50; loss of sensibility in legs and ability to move them.

April 24th, temperature 39.0C; no paralysis of gustatory muscles.

April 25th, delirium all night; temperature, 39.6C.; great weakness.

April 26th, temperature, 37.6C.; breathing 42; pulse 132; generally better; able to drink water; pupils equal, not dilated; at 5:00 p. m. unable to expectorate; unable to speak so as to be understood. Dead at 7:00 p. m.

Post mortem—Macroscopically there was only a slight hyperaemia; no Negri bodies were found.

With the brain of this patient 33 rabbits were injected. Of these 9 died of sepsis, 24 died of rabies in from 6 to 7 days. Three series of animals were injected with like results. There was no contaminating infection and the passage bodies of Lentz were found in the brains of the rabbits dying.

Simon in his article mentioned 16 cases of acute ascending paralysis of which 11 died. The author's case is No. 17.

#### DETAILED DATA CONCERNING CASES MENTIONED BY SIMON.

*Five Cases of Bareggi.*—Patients took sick after finishing the treatment by Fenan method. First symptoms were weakness of legs, like paralysis; urine retention; high temperature and death in one week.

Post mortem—Brain hyperaemic; no Negri bodies found. Rabbits injected died in from 5 to 6 days of paralytic rabies.

*Case of Babes and Mironescu.*—Woman 40 years old; took sick on the 14th day of treatment and the 20th day following the bite; died in fifteen days.

Post mortem—Myelitis; no sign of Negri bodies; rabbits injected did not die.

*Case of Babes.*—Man aged 20; took sick on 12th day of treatment and 14th day following bite; showed paralysis of legs on 3d day; on 4th day ascending paralysis; rabbits injected with brain did not die.

*Case of Babes.*—Man aged 42; took sick on 12th day of treatment and 16th day following bite; on 4th day of sickness had paralysis of bladder and rectum, died on 5th day; rabbits injected with brain did not die.

*Case of Babes*—Patient took sick on last day of treatment and 19th day following bite. Died on fourth day of disease. Post mortem showed myelitis. Negri bodies were found in brain. Rabbit injected did not die.

Two cases of Nitsch and Berger without post mortems.

The author mentions the case of J. Koch but believes that this case adds nothing new or conclusive.

There are three theories to explain the occurrence of paralysis during the Pasteur treatment.

1. J. Koch—Due to street rabies virus of low virulence, e. g., abortive, atypical street rabies.

2. Babes—Due to rabies toxin which is liberated under the effect of the treatment.

3. Author—Due to infection with the fixed virus.

The author does not consider Koch's theory at all probable, because there are people taking the treatment developing paralysis that were not bitten by rabid animals. Such were the cases reported by Sabarthey, Brault, Dorkschoetz, Tonni, Borger, Chailoud, Neghrigarlow, Ostyanm, Juredy and Franca, eg., 10 cases. J. Koch says that these cases are no argument against his theory, for animals may recover from rabies. Yet the author in his large experience has not seen a single case yet there are other cases in which the people were not bitten by rabid animals as follows:

*Case of Berger*—Doctor in Pasteur treatment institute took sick on thirteenth day of treatment and was well in seven days.

2. Man 37 years old, not bitten by rabid dog. Took sick on sixteenth day of treatment and was well in three weeks.

3. Man 53 years old, not bitten by rabid animal. Took sick on fourteenth day of treatment, was well in three days.

4. Man, 43 years old, not bitten by rabid animal. Took sick on thirteenth day of treatment and died on fifth day of disease. No post mortem held.

5. Doctor 22 years old. Took sick on the seventh day following end of treatment and was well in three weeks.

6. Veterinary student, took sick on tenth day of treatment. On seventh day began to recover.

Thus we have here six cases not bitten by rabid animals, and especially two doctors, who know they had no chance for infection developing paralysis.

Another thing that is against Koch's theory is the shortness of the incubation period, which is much shorter than in true rabies.

In 65 per cent. of cases of true rabies the incubation period is from 20 to 60 days. Only in 13.7 per cent. as the incubation period

less than 20 days. In the cases of paralysis mentioned by Simon 56 per cent. developed the disease in less than 20 days; 89.38 per cent. developed in less than 30 days. In one case the disease developed in less than 10 days following the bite.

Babes believes that the fact that the rabbits injected with the brains of his patients failed to develop the disease goes to prove his theory that the paralysis is due to the street rabic toxin liberated by the treatment with fixed virus. The author believes that his case, the five cases of Baregii and that of Franca go to prove that the paralysis is due to the fixed virus infection. The author also believes that the experience of the Charkow Pasteur Institute in the early part of 1909 is also important. Owing to the experience of the German Pasteur Institute with the harmlessness of fixed virus the Charkow laboratory began using one-day cords while they had used only two-day cords before. During one month twenty cases were treated and in practically all cases there was some transitory disturbance of the nervous system that passed off in a few days. These nervous disturbances disappeared in from one to two days. Then they ceased using one-day cords. One is then puzzled to know why the German Pasteur Institutes do not have the same trouble. That can only be explained in the difference in the quality of German and Russian virus.

#### EXPERIMENTS WITH FIXED VIRUS.

##### *Subcutaneous Injections with White Rats and Mice.*

Place.	Results kill.
Charkow .....	67 per cent.
Sassari .....	100 per cent.
Rome—Turin .....	60 per cent.
Florence .....	36 per cent.
Bologna—Madrid .....	0 per cent.
Berlin .....	50 per cent. white rats—gray mice
Paris .....	20 per cent.

Krans and Fukuhara found that the fixed virus of Odessa and Krakow when injected subcutaneously was virulent for rats and mice, while that of Wien, Bukarest and Budapest was avirulent.

#### CONCLUSION.

1. Although fixed virus is a very weak toxin it can cause an infection of rabies.
2. The cause of the paralysis which occurs in the course of the treatment is due to fixed virus.

3. Although this paralysis occurs seldom it is to be considered when giving intensive treatments.
4. Every Pasteur Institute should determine the quality of its fixed virus.

### PARALYSIS IN THE COURSE OF THE ANTIRABIC TREATMENT.

GERHARD SIMON, VII ARMY CORPS, MUNSTER.

Centralblatt F. Bakt. Orig. Vol. 68, p. 72—1913.

Von Swieten first mentioned the paralytic form of rabies which was differentiated from the rapidly fatal progressive bulbar paralysis. Photophobia and reflex and respiratory troubles are common to both forms. Gamaleia in 1889 reported nineteen cases and thought they were due to persons especially susceptible to antirabic virus. Pasteur on the contrary thought the paralysis was due to the street virus. Peter, a Frenchman and Frisch, a German, in 1887 called it paralytic rabies of the laboratory. Pasteur proved it to be due to the street virus by injecting rabbits subdurally with material from men dying from rabies due to being bitten by a rabid dog, in which case the rabbit died in from fourteen to seventeen days, while rabbits injected with fixed virus died in six to seven days. In 1888 Grancher reported 4,836 cases from twenty-one institutes without a single case of paralysis. In addition to the fatal severe cases of rabies several mild cases of paralysis and nerve disturbances were reported from time to time. They showed clinically a rapid paraplegia of the legs with bladder and intestinal paralysis. Seldom was there Landry's bulbar paralysis or peripheral neuritis. In 1905 Remlinger, director of Constantinople Pasteur Institute, reported 107,712 injections with twenty-six cases of paralysis and fifteen case histories.

The most important question in this problem is the etiology. Since the brain tissue of the living cannot be examined and the sputum, cerebro-spinal fluid and other secretions gives negative results the etiology is yet unknown. The clinical history of eighty-four are given in more or less detail. In 211,774 treated cases there were 100 cases of paralysis or one in every 2,117, or .048 per cent.

TABLE SHOWING AGES AND SEX OF THOSE PERSONS DEVELOPING PARALYSIS DURING ANTIRABIC TREATMENT.

AGE.	Male.	Female.	Unknown.	Total.
Unknown.....	9	1	10	20
Under 12 years.....	4	2	3	9
Over 12 years.....	47	7	1	55
Totals.....	60	10	14	84

Sex majority male.....60  
 Ages over 12.....55

The number of cases of paralysis does not vary from year to year or from month to month. Many of the cases occurred among syphilitics, drunkards and neuresthenics. The disease also occurred chiefly among adults. In six cases the persons were not bitten by rabid animals. Cases of paralysis occur among the bitten as well as among those not bitten.

INCUBATION PERIOD FOLLOWING BITE AND BEGINNING OF TREATMENT.

FOLLOWING BITE.	Number.	Following Beginning of Treatment.	Number.
1 to 10 days.....	1	1 to 10 days.....	19
11 to 20 days.....	36	11 to 20 days.....	46
21 to 30 days.....	22	21 to 30 days.....	9
31 to 40 days.....	3	31 to 40 days.....	
41 to 50 days.....	2	41 to 50 days.....	
52 days.....	1		
88 days.....	1		
No data.....	18	No data.....	10
Totals.....	84	Totals.....	84

DAYS.	Percentage.	DAYS.	Percentage.
1 to 10 days.....	1.51	1 to 10 days.....	25.60
11 to 20 days.....	54.54	11 to 20 days.....	62.16
21 to 30 days.....	33.33	21 to 30 days.....	12.16
31 to 40 days.....	4.54	31 to 40 days.....	
41 to 50 days.....	3.03	41 to 50 days.....	
52 days.....	1.51		
88 days.....	1.51		

The incubation is shorter for death and paralysis in treated cases than in untreated cases.

The incubation period is shorter than for true rabies, most of the paralyzes occurs during the treatment, a fourth within seven days following the end of the treatment.

As predisposing causes to the development of paralysis, overstrain and exposure to cold are prominent.

The premonitory symptoms are stiffness and pain in the lumbar regions. These last for a few days and then the paralysis begins.

Puscariu give permonitory symptoms in ten cases:

1. Mild pain lower extremities, retention of urine and feces, four cases.
2. Mild fever three to five days, mild weakness of lower extremities. Retention of stools and urine, four cases.
3. High temperature, ascending paraplegia of the upper and lower extremities, with recovery in ten to twenty days, two cases.

#### KIND OF PARALYSIS.

PARALYSIS.	Acute.	Chronic.	No history.	Totals.	Percentage.
Monolateral.....	2	1		3	} 3.57
Facial.....					
Bilateral.....		1		1	} 9.52
Paresis legs, retention urine and feces.....	8			8	
Paraplegia legs without urine or bowel disturbance.....	6	6		12	} 40.47
Paraplegia legs with urine and bowel disturbance.....	16	5	1	22	
Ascending paralysis.....	16	19	1	36	42.85
Multiple paralysis.....	3			3	3.57
Totals.....	52	30	2	84	

As we see facial paralysis occurs in about 3.5 per cent. of cases, but mild cases must be more frequent as Gabier and his assistants have often noticed slight paralysis with increased secretion of saliva, fatigue, pain at the point of injection, headache, and sleeplessness. These slight disturbances are seldom noticed by the patients and not very often by the doctors.

Mutiple paralyses occur seldom. The most frequent is disease of the spinal cord, especially of the lumbar region, from the mildest weakness of the extremities to the severest paraplegias of the legs or the terrible form of Landry's ascending paralysis. Spinal cord disturbances are not the only disturbances that occur in the anti-rabic treatments.

Most of the cases of paralysis are acute (50 cases—61.9; chronic 30—35.7) which even then do not last more than a month or two. Of the six persons not bitten four had ascending paralysis, one paraplegia of both legs and one multiple paralysis.

This disease is differentiated from anterior poliomyelitis by the absence of atrophy of muscles. It is differentiated from true paralytic rabies by absence of hypersensitiveness of the senses as well as

absence of reflex and respiratory disturbances, but in both sorts of paralysis there is a myelitis, but this does not rule out the possibility of both being due to the same cause.

Of the 84 cases of paralysis 65, or 77.42 per cent., recovered. The recovery in many cases was entirely unexpected, the recovery took place in spite of the severest symptoms. On the other hand three cases began very mild but died with very severe symptoms. Nineteen cases, or 22.6 per cent., died. Of these 19 there were 13 acute cases and 6 chronic ones. In these cases most of the deaths were due to sepsis. Eleven died during the treatment and eight after the treatment was finished. None among the group of facial paralysis died.

Of the 34 cases of paraplegia of both legs 3, or 8.8 per cent., died.

Of the 36 cases of ascending Landry's paralysis 15, or 41.6 per cent., died. Of the 16 acute cases of this variety 11, or 68.75 per cent., died. Of the 19 acute cases 4, or 21.05 per cent., died. Of the 6 not bitten by a rabid animal 5 recovered and one died, this last case being a drunkard.

In all cases of paralysis the prognosis is uncertain, in paraplegia it is not good, in ascending paralysis it is very bad.

Of the 19 who died 12 were post mortemmed. One had a general T. B. The other had a pneumococcus-meningomyelitis. In all the other cases there was a marked hyperaemia of the central nervous system and a high grade of myelitis with change in the white matter of the cord, especially in the lumbar region; the last is not present in true rabies. In only two cases were the changes in the cord studied minutely, e. g., by Mironescu in Bukarest, and Koch in Berlin. In both cases there was a marked round cell infiltration about the blood vessels, swelling of the nerve fibers with destruction of the axis cylinder in the white substance and the disappearance of the nerve cells in the gray substance. Negri bodies were not found in either of the cases. In Mironescu's cases the rabic tubercles of Van Gehuchtschen were found among the ganglion cells. Mironescu believed that the trouble was due primarily to a circulatory disturbance which was the cause of the further changes in the nervous system and particularly in the spinal cord. Koch believe that the pathological changes in the cord were due primarily to the effect of the etiological factor of rabies. He believed that the spinal cord was a living culture medium for this organism. Here, on account of the lesser resistance, the anterior ganglion cells of the cervical and lumbar regions are affected, thus the spinal symptoms



first arise. Only when the larger ganglion cells are attacked does true rabies appear. The lumbar region of the cord is then, according to Koch, a locus minoris resistentia.

#### CASES AND DEATHS ACCORDING TO METHODS BY TREATMENT.

KIND OF TREATMENT.	Cases Paralysis.	Deaths.	Cases Treated.
Classical Pasteur method.....	6	2	32,045
Its modification.....	53	8	.....
Method of Puscariu.....	10	.....	.....
Method Babes (Roumanian).....	5	4	.....
Method of Hôgyes.....	2	.....	.....
Method of Ferran.....	8	5	.....

#### CLASSICAL METHOD OF PASTEUR.

Cord of rabbit, subdurally infected with fixed virus, killed 24 hours before the usual time of death, dried over caustic potash 2-14 days at 20°C. in the dark. Dose 1 c.m. of the dried cord is emulsified in 5 c.c.m. of sterile broth or .8 per cent. sodium chloride solution and injected daily into the abdominal wall. Begin with 14-days cord and end with 2-days cord. In the milder cases 14 days treatment is sufficient.

#### MODIFIED PASTEUR METHOD.

The unmodified classical Pasteur method is not used any more except in France. Many modifications have been made for cases coming for treatment long after being bitten, for persons severely bitten, etc. Because fresh cord injected subcutaneously does not seem virulent to man, this also has been used in hope of shortening the treatment period.

#### ROBERT KOCH INSTITUTE FOR INFECTIOUS DISEASES.

Opened July 28, 1898.

#### METHOD OF TREATMENT.

First period, July 28, 1898, to September 28, 1899. Begin with 12-day and finish with a 3-day cord. Duration of treatment, 21 days.

Second period, September 29, 1899, to August 20, 1901. Begin with 8-day cord and finish with a 2-day cord. Duration of treatment, 21 days.

Third period, August 21, 1901, to August 3, 1902. The mild scheme of treatment is altered in that on the 12th day a 2-day cord is used and the treatment finished in 16 days.

Fourth period, March 9, 1902, to 1904. During this period one person who took the mild treatment died in 103 days, another in 26 days following the end of the treatment. After that, all patients received the same treatment except those most severely bitten. Because four cases died following the more concentrated form of the treatment it was modified by beginning with an 8-day cord and ending with a 2-day cord. The 2-day cord is commenced on the eighth day. Dose 3 c.c.m. in bulk. Duration of treatment, 21 days.

Fifth period, 1904, 1-day cord used and in spite of this there was one death.

Sixth period, 1905. Treatment began with 4-day cord and on the fourth day a 1-day cord is used.

Seventh period, April 1, 1906. The people who did not come until some time after they were bitten on the first day received a 3-day cord and on the third day a 1-day cord.

On July 7, 1906, an institute was opened at Breslau which adopted the last scheme. In 1907 the first cases of paralysis occurred at the place.

Eighth period, 1910. All treatments were begun with a 3-day cord.

#### *Method of Treatment.*

Day.	Cord Used.
1 .....	3
2 .....	2
3 .....	1
4 .....	1
5 .....	3
6 .....	2
7 .....	1
8 .....	1
9 .....	3
10 .....	2
11 .....	1
12 .....	1
13 .....	3
14 .....	2
15 .....	1
16 .....	1
17 .....	3
18 .....	2
19 .....	1
20 .....	1
21 .....	1

Dose 2 c.c.m. cord emulsion (1.5% sterile salt solution) injected daily under the skin of the abdomen.

## STATISTICAL DATA FOR BERLIN AND BRESLAU.

PERIOD.	Time.	Cases Treated.	Paralysis.	Deaths.
First to Sixth.....	July 28, 1898 to March 1, 1906.....	2,896	.....	21—.73%
Seventh.....	January 4, 1906, to March 9, 1909.....	1,490	2—.12%	7—.47%
Eighth.....	.....	819	3—.36%	5—.61%
Total.....	.....	5,205	5	33

## METHOD OF PRUSCARIU (Jassy).

The brain of a rabbit dying from fixed virus is ground up in a sterile mortar with 100 c.c.m. physiological salt solution, then filtered through fine wire gauze and heated for fifteen minutes in a specially constructed water bath at different temperatures for the different treatments.

First period, August 1, 1891, to February 5, 1896, the cases were treated by the Babes modification of the Pasteur method. Results, 631 treated and there were only 7 deaths.

Second period, on February 5, Puscariu began his method of weakening of the virus by heating. Until 1901 the virus was heated at 80-45°C. for fifteen minutes. Dose 2 to 3 grams. 2 injections daily. Treatment from 12 to 21 days. Result, 2,613 treated; 10 cases (.38 per cent.) cases of paralysis; (12 cases (.48 per cent.) deaths from rabies.

Third period, end of 1907, a less extensive treatment was begun. Virus heated 80 to 70°C. Result, 2,214 cases treated; no paralysis and no deaths.

To February 2, 1912—

## PRESENT FORM OF TREATMENT.\*

DAYS.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Mild cases....	65°C.	60°C.	55°C.	65°C.	60°C.	55°C.	50°C.	45°C.	.....	.....	.....	.....
Moderate cases.....	65°C.	60°C.	53°C.	36°C.	60°C.	55°C.	50°C.	60°C.	55°C.	50°C.	45°C.	.....
Severe cases.....	65°C.	60°C.	55°C.	50°C.	60°C.	55°C.	50°C.	45°C.	60°C.	55°C.	50°C.	43°C.

\*In all the cases undried fixed virus was used and heated for fifteen minutes to the degree indicated in each case.

## BABES, OR ROUMANIAN METHOD.

This is a combination of Puscariu and Pasteur method. The duration of treatment is 13 days. Result, 6,525 cases treated; 8 (.12 per cent.) cases of paralysis.

## HÖGYES, OR DILUTION METHOD.

The brain of a rabbit dying of fixed virus is mixed with 100 parts of .7 per cent. sterile sodium chloride solution. Dilutions of 1:200, 1:500, 1:1000, 1:2000 are injected. Dose  $\frac{1}{2}$  to 4 c.c.m. or .001 to .04 grams of cord.

*Scheme of Treatment.*

Day.	Mild Case	Moderate Case.	Severe Case.
1 .....	.001	.002	.002
2 .....	.002	.003	.004
3 .....	.003	.004	.006
4 .....	.004	.006	.008
5 .....	.....	.....	.....
6 .....	.005	.005	.01
7 .....	.....	.....	.....
8 .....	.0075	.01	.015
9 .....	.....	.....	.....
10 .....	.01	.015	.02
11 .....	.....	.....	.....
12 .....	.015	.02	.025
13 .....	.....	.....	.....
14 .....	.02	.025	.03
15 .....	.....	.....	.....
16 .....	.....	.....	.....
17 .....	.025	.03	.035
18 .....	.....	.....	.....
19 .....	.....	.....	.....
20 .....	.....	.....	.....
21 .....	.03	.035	.04

This method has been used in Budapest since 1890. Result: 45,777 cases treated; 2 cases paralysis and 131 deaths.

In Weltewreden up to 1906 cases were treated with the concentrated Pasteur method, since then with Högyes dilution method.

Result, Pasteur method: 3,452 cases treated; 11 cases paralysis; cases paralysis 1 to 314 cases treated.

Result, Högyes method: 2,940 cases treated; 1 paralysis; cases paralysis 1 to 2,940 cases treated.

Paralysis occurs in all methods of treatment but most seldom in Högyes dilution method. Delay or interruption of the treatment has no effect on the paralysis.

In five cases material from the brain and cord of patients dying of paralysis were injected into rabbits. These rabbits died with symptoms of paralytic rabies in five to six days. Inoculation from the rabbits into others were not made. Material from five other

cases was injected with negative results. In another case Joseph Koch got positive results in several successive passages in rabbits whose deaths were typical of fixed virus. Franca of Lisbon injected two rabbits subdurally with the cerebro-spinal fluid of two cases. In one rabbit symptoms began on the 11th day and death occurred on the thirteenth day. In the second and third passages the animals took sick on the seventh day and died on the ninth day. Franca's conclusions are as follows: "Thus one sees that these men had a rabic myelitis due to the treatment, not only was the animal which bit them not rabid but the incubation period was that characteristic of fixed virus.

In seven cases sputum was injected with negative results.

Paltauf, post mortemmed four cases who died between the 22d and 27th days following the bite of a rabid dog during the treatment from an intercurrent disease. He inoculated four rabbits with the medulla oblongata of the four post mortems. The rabbits died 120-47-40-40 days after the inoculation of paralytic rabies. The long incubation period Paltauf thought was due to the weakening of the street virus, by the fixed virus injections.

In three other cases that died long after the treatment was finished inoculation experiments were negative. Paltauf concluded from this experience that the street virus lay latent for a long time after partial treatment and was completely destroyed after efficient treatments.

The findings of Koch, Francos, and Paltauf need further verification. Pasteur knew of cases of paralysis but thought they were due to hysteria. He called it lyssaphobia. Laveran, Ivo-Novi, De Doddi, Zaccharia, Roux, Bronardel, Charlloud, Krojuschkin, Brant and Calabresse held Pasteur's view.

As early as 1887 Babes believed these cases were due to the toxin of the cord injected, and sought modifications to reduce the dangers of paralysis. Claudio Fermi did some experiments that proved the toxicity of the cord material injected.

The following case is one in which there was anaphylaxis. Peasant bitten by rabid wolf and treated according to scheme of Babes with heated virus. On the 4th day he suddenly went into a coma after intravenous injection of 10 c.c.m. of antirabic serum. After he had recovered he was treated with cord emulsion and died after some days. From the beginning there was considerable strife between Koch of Berlin, Babes of Bukarest, concerning the etiology of these paralysis, Koch insisting that it was due to street virus of low virulence, Babes that it was due to the toxic effect of the cord injected. Koch always insisted that the paralysis was due to abor-

tive or atypical rabies. Babes always insisted on the toxic effect of the cord injected.

That the cords do have some toxic effect is somewhat substantiated by the Berlin Pasteur Institute in that one-half of their patients have redness and swelling about the point of injection between the 8th and 12th days.

The author believes with Koch that the paralyses are mild forms of rabies and are not, in all cases at least, due to the toxic effect of the cord emulsion.

The fact that the incubation period in paralysis is shorter than in true rabies seems to be another proof that paralysis is atypical rabies. It seems that the street virus affects the cord first, antibodies are quickly formed and thus invasion of the brain tissue is prevented. The etiology of these paralyses is uncertain but it does seem that most of them are caused by street virus. A few may be caused by fixed virus.

#### CONCLUSIONS.

1. Paralyses are infrequent about .048.
2. Paralyses occur at all times of year.
3. The disease occurs mostly among adult males.
4. The disease occurs among those not bitten as well as the bitten, who take the treatment.
5. The incubation period is shorter than in true rabies. Most are taken sick during treatment; a fourth within seven days following treatment.
6. As predisposing factors are overstrain and exposure to cold.
7. The paralysis appears as facial, paresis, paraplegia of legs with bladder and rectum disturbances, ascending Landry's spinal paralysis and multiple paralysis. Two-thirds of the cases are acute.
8. The prognosis in each case is uncertain, in paraplegia it is especially uncertain, in ascending paralysis very bad. The mortality is 22.6%.
9. Pathologically anatomically there is a myelitis with involvement of the white matter. Negri bodies have never yet been found in those dead from paralysis.
10. Paralyses have occurred in all methods of treatment, but they are less frequent in the dilution method of Högyes. Continuing or leaving off the treatment does not affect the course of the disease.
11. The etiological factor in this disease is not a single one, it seems to be caused by street virus as well as fixed virus.

## INVESTIGATION OF TYPHOID FEVER EPIDEMIC AT DECATUR, ADAMS COUNTY, INDIANA.

WILL M'ABEE AND WILL SHIMER.

On the afternoon of March 3d the Mayor and health officer of Decatur called Mr. Barnard over the phone and asked his assistance in finding out the cause of the peculiar epidemic in Decatur.

The following notice appeared in the Decatur Democrat on February 26, 1914, and will give some idea of the uncertainty of the physicians concerning the diagnosis of the disease:

### PECULIAR EPIDEMIC

### RESEMBLING TYPHOID FEVER,

BUT DIFFERENT IN MANY WAYS, PREVALENT HERE.

*Cases Are Reported.*

Health Officers Diagnose It as Auto-infection  
And Tell of Its Causes.

After a careful inquiry into conditions in and about Decatur which required several hours this morning, we believe we can safely make the statement that there is not an epidemic of typhoid fever in this locality. For a week or two past each day, there have been rumors that there are a number of these cases in this city. Naturally a number of people became more or less alarmed, for if there were as reported fifteen or twenty cases there must necessarily be some cause therefor and it would be most important that the cause be discovered and eliminated as quickly as possible. With that purpose in view we began today to investigate the truth of the statements.

### HEALTH OFFICERS REPORT.

Dr. H. F. Costello, city health officer when asked concerning the report that there are sixteen cases of typhoid fever in the city said:

The records in my office show that but two official reports of typhoid fever have been made. These are the cases of Elmo Smith and Bernard Parent. There are a number of cases which very much resemble typhoid fever, including that of my own son, but I am convinced and am upheld by several other physicians that the trouble is an auto-infection of the intestines which also affects other parts of the body. These cases are being treated precisely as typhoid and have many of the symptoms, but come usually from indigestion and not from any specific germ as in typhoid. I am convinced that there is not an epidemic of typhoid here, but intend to make every effort to ascertain the truth so long as these reports continue. I will insist on an examination of the milk sold in Decatur, of the water at the city plant and will do everything possible to give the public the exact conditions as I find them.

## ANOTHER PHYSICIAN'S STATEMENT.

We also interviewed another well-known physician who made the following statement:

There is a misunderstanding as to there being an epidemic of typhoid fever in Decatur. There is a class of cases, I am informed by our health officers and know from some personal experience, that has some resemblance and symptoms of typhoid fever, but which upon careful inquiry we find in the great majority of cases are from a toxemia or auto-infection, which is produced from eating too much food and such foods that poison the system, especially so at this time, owing to the extremes of weather, the cold and the lack of exercise and pure air.

A part of this infection, we are led to believe is due from milk. Therefore before any milk is used, no difference from whence produced, it should be brought to the boiling point, before using.

It may be well also to state that it is proper to be particular in the handling and care of all these patients. I would also state that this auto-infection has produced as much disturbance of the lungs, throat and air passages as it has of the bowels. We think that when better weather is upon us and the people get out and have more fresh air and better exercise that all this trouble will disappear.

It might also be stated that all drinking water should be boiled before using and all food well and carefully cooked. These precautions may save some member of your family a very serious illness.

On the evidence of the 3d of March Will McAbee and myself started to Decatur and arrived there Wednesday, March 4th. We immediately got in touch with Dr. Costello, city health officer. After a general discussion of the situation we concluded that we had better visit several of the persons then sick and find the age, sex, residence, place of employment, source of water and milk supply and something concerning the personal habits of each of them.

The following is a tabulation of the information obtained:



INITIALS. PATIENTS.	Sex.	Age.	Business.	Water.	Milk.	Began.	Outcome.
F. C.	M	12	Catholic school	City driven well	Robinson	2-22-14	Positive widal. Nose bleed. Atypical.
B. P.	M	13	Electrician	Driven well at home, city water at shop. <del>at home</del>	Krill milk at home, Robinson's at restaurant.	2-20-14	Nose bleed. Typical.
B. S.	M	20	Waiter at Smith and Company restaurant.	City water.	Drank lots of milk at Smith restaurant, Robinson's.	2-14-14	Typical.
H. S.	M	14	South ward school.	City at home, driven well at home.	Likes milk, Robinson's.	2-20-14	Typical.
G. S.	M	10	South ward school.	City at school, driven well at home.	Likes milk, Robinson's.	2-22-14	Typical.
T. H.	M	36	Manager Erie Restaurant.	City water.	Robinson's.	2-24-14	Not very typical.
H. J. C.	M	21	Electrician	City water.	Robinson's, at Smith's restaurant.	2-20-14	Not very typical.
D. E.	F	6	School.	City	Robinson.	2-31-14	Atypical.
R. H.	F	14	School.	City	Robinson.	2-14-14	Typical.
R. V.	M	5		City	Robinson.	2-19-14	Typical.
M. B.	F	36		City	Robinson.	2-4-14	Typical.
C. R.	M	23	Section hand.	City	Robinson.	2-17-14	Typical.
L. B.	M	6		City	Robinson.	2-17-14	Typical.

Several other cases were visited which did not have typical symptoms of typhoid. In every instance these persons had been using Lester Robinson's milk. Children, particularly, had suffered from diarrhoea and loss of appetite. In no case during the last three or four weeks had infants at the breast had any intestinal disturbances.

On superficial inquiry we were often led to believe that we were mistaken in our belief that Robinson's milk was at fault but on further inquiry we always found it concerned. Several young men who were sick and whose family at home did not use this milk were in the habit of taking a bottle of milk and a sandwich at the restaurant that used Robinson's bottled milk. In practically every instance we found that the persons sick were unusually fond of milk.

In the afternoon Mr. McAbee made a thorough investigation of the city water works. Bacteriological and chemical examinations of the water showed no evidence of contamination.

Drs. Costello, Grandstaff and myself visited the Lester Robinson dairy at the Dave Daily farm about six miles southeast of Decatur. The conditions at the dairy were very bad. The cow barns were crowded and dark and dirty and the milkhouse not well kept. The Robinson dairy produced about ten gallons of milk and besides this he bought milk as follows: 10 gallons daily of E. W. Daily; 12 gallons daily of Ed Ahr; 5 gallons daily of Kerns; 10 gallons of Sam Kramer; 8 gallons of John Schurgen, and 6 gallons of Davis Daily.

As the conditions of the dairy farm and milkhouse could not be immediately changed to meet the requirements, Dr. Costello canceled Robinson's license. Contrary to law Robinson was collecting the empty bottles from the cases of typhoid and filling them again without sterilization.

As we could not be certain where the original source of the infection was we concluded that it would be best to publish the names of the farmers from whom Robinson obtained his milk so that other dealers would not buy their milk and thus continue the source of the epidemic. Before Robinson can again sell milk he must convince the local health officer that he can sterilize his bottles and pasteurize the milk. The Mayor and City Council promised to make the requirement for all milk sellers in Decatur.

## TYPICAL CASES TYPHOID FEVER IS THE REPORT.

STATE BOARD INVESTIGATES FIFTEEN CASES.

CANCEL LICENSE OF MR. ROBINSON.

WILL STAMP IT OUT.

*Health Officers Make Statements and Ask Assistance of Decatur People.*

Representatives of the State Board of Health arrived here this morning and assisted by Dr. H. F. Costello of the city board of health, and Dr. J. C. Grandstaff of the county board of health, immediately began an investigation of the epidemic of fever which has been causing much worry here for some days past. Fifteen cases were examined and in each case it was found that the milk used in the family had been obtained from the Lester Robinson dairy. This afternoon an investigation of the dairy was conducted and the barnyard and milkhouse were found to be unsanitary. His license was immediately canceled and this dairy cannot sell milk in the city of Decatur until the city ordinance has been complied with. He was also notified that before he could sell milk again he would have to arrange to pasteurize the milk, which means that it must be heated to 145 degrees Fahrenheit for half an hour, and the bottles sterilized, requiring that they be covered by boiling water for twenty minutes. While the board members realized the seriousness of the declaration they feel that this should be given the greatest publicity because of the fact there are perhaps now in this city and vicinity more than fifty cases of typhoid fever. Many of these are of mild form while others are very severe.

Mr. Robinson has been buying his milk from six farmers. None of these are censured by the board, which believes that the milk became infected by the careless handling at the dairy and not by any fault of these people.

The local health authorities will insist also that all other dairies comply with the same order made to Mr. Robinson and will ask the city council to immediately adopt an ordinance providing that all dairies pasteurize their milk and sterilize the bottles.

The state bacteriologist asked us to state that this epidemic would continue unabated for ten days or two weeks but after that time the number of cases should begin to reduce. He also stated that the State Board of Health will furnish free to physicians whatever vaccine is necessary for immunizing purposes.

To satisfy themselves and the people in general, the state board has furnished local authorities with containers and will thoroughly test the city water to see whether or not there are any typhoid germs therein, though they feel certain there is not, they say. If there were, the number of cases would be much larger than at present. However, it is important that great care be used in handling the numerous cases here to prevent the further spread of the disease.

Dr. Costello's books show but ten cases reported, though the state men visited fifteen cases this morning and were informed of a number of others. It is believed that there are from fifty to one hundred cases here, though many are mild. One man was found at work, who had a typical case of the disease, though it was mild. The officers believe they have ascertained the cause and that they will be able to now stamp out the disease.

Those who sold milk to Robinson should not attempt to sell their milk to any other dairy until the investigation is complete and until it is known there is no typhoid carrier on their farm.

### CAUSE IS DISCOVERED.

BOARD OF HEALTH FIXES BLAME ON ROBINSON DAIRY.

IS TYPHOID FEVER.

*License of Milkman is Revoked Because of Unsanitary Conditions.*

Dr. William Shimer, bacteriologist for the state board of health, and Dr. Will McAbee, also of the board, arrived in the city this morning to make an investigation of health conditions and unearth the causes leading up to the numerous cases of typhoid fever now in the city.

They began their investigations in the city, giving particular attention to the milk supply in the families where the sickness prevails, and after discovering that in every instance the sick had procured their milk from the Robinson milk route, they went out to the dairy to see what conditions prevailed there.

On their arrival the suspicion that this dairy had caused the trouble was confirmed. They found conditions unsanitary, the cows were in crowded quarters, and the barns were unclean. It was also found that the milk had not been pasteurized, nor the bottles sterilized, as is required by the rules of the State Board of Health. Quick action was taken and the license of the milkman was suspended until his business is reformed to conform to the rules of the State Board of Health.

The trip to the dairy was made by Dr. Shimer, Dr. Grandstaff, secretary of the county board of health, and Dr. Costello, secretary of the city board of health.

In addition to the milk produced from his cows, Robinson was selling milk purchased from farmers in the vicinity. He was getting twelve gallons of milk daily from Ed Ahr, ten gallons from E. W. Dally, five gallons from Wash Kern, ten gallons from Sam Kramer, eight gallons from John Schurger, and six gallons from Davis Dally.

The health officers stated positively that no blame is to be attached to those from whom the milk was purchased, but it was the manner in which the milk was handled after reaching the dairy that was responsible for the conditions, so far as they were able to discover.

The revocation of Robinson's license should be a lesson to all milkmen selling milk in the city. The city board of health will insist that all milk, before it is placed on the market, shall be pasteurized for half an hour, at a temperature of 145 degrees, and that all bottles in which it is delivered to customers shall be sterilized for at least twenty minutes. This is required by the rules of the State Board of Health, and the rule will be enforced.

For the treatment of the disease Dr. Shimer announces that the State Board of Health will furnish typhoid vaccine to physicians free. There are now about twenty cases of serious sickness in the city and practically all of them are declared by the investigators to be typhoid fever.

Other cases are liable to follow the ones now developed, as milk from this dairy has been sold up until today and the germs may have been im-

planted and may yet develop into the disease. For several days new cases are liable to occur from this source.

Notwithstanding, the source of the trouble seems to be satisfactorily settled, samples of the city water, as well as water from private wells, will be taken to Indianapolis for analysis.

## EPIDEMIOLOGY OF TYPHOID FEVER.\*

Neufeld.

Measures against typhoid are direct and indirect.

The direct active measures against typhoid were inaugurated by R. Koch in the southwest portion of Germany in 1902 in order to rid that great area of typhoid which not only existed year in any year out but constituted a great danger for the German army marching through that country.

The most important part of that campaign was the establishment of local bacteriological laboratories which were not only for the purposes of diagnoses but to assist the local health officers in controlling this disease. An early reporting not only of the typical cases but also the suspected cases is absolutely necessary. An examination must be made immediately of everybody coming in contact with the patient, *c. g.*, members of the family, other members of the household and of the servants, for any rise in temperature or any other departure from normal that would indicate disease, in which case an examination of the blood, urine and stools should be made. If these examinations prove negative further investigation for the source of the disease must be made. All typhoid patients must be isolated either at home or in the hospital. Before typhoid patients are dismissed their feces and urine should be free from typhoid bacilli. For this purpose three examinations should be made covering a period of eight days.

Bacilli carriers should be told of their condition and instructed to sterilize or at least wash their hands carefully after each stool. Bacilli carriers should not be allowed to do any cooking or to take any part in the preparation of food.

All persons connected with the preparation of food for a large number of persons should be examined to determine whether they are bacilli carriers or not. In many cases it will be necessary to close a dairy or milk depot where the owner or one of his assistants is a bacilli carrier.

\*This report is given as a sequel to our "Epidemiology of Typhoid in Indiana" in the last annual report.

Bacilli carriers play a very important role in public institutions. Where it is necessary to examine large numbers of persons a Widal examination of the blood will be sufficient and all cases called bacilli carriers that give a positive Widal in a dilution of 1 to 50.

The preventive measures in southwest Germany lowered the typhoid rate greatly. The total number of cases has been decreased more than one-third in spite of the increase in population.

1904 .....	3,487 cases
1905 .....	2,552 cases
1912 .....	1,081 cases
1913 .....	1,097 cases

It has been found to be absolutely impossible to completely eradicate typhoid by active measures. Early contact with typhoid patients in the early days of the disease is also an important source of new cases. Even in southwest Germany typhoid cases were often not reported before the eighth or ninth day, and after that several days sometimes elapsed before preventive measures were taken. It was then many times impossible to isolate the patients. Even if it is possible to carry out all of the necessary measures at the proper time, it is not possible to completely wipe out typhoid.

Along with direct measures against typhoid it is necessary to use indirect measures. Of these the most important are sanitary disposal of urine and feces, *e. g.*, sanitary toilets, and an absolutely safe water supply.

Salad made by unwashed hands soiled with feces and urine containing typhoid bacilli are a common source of typhoid, particularly in the summer time.

Typhoid vaccination is important for attendants on the sick and for troops in the field.

#### RAT AND FLEA SURVEY OF INDIANAPOLIS.

During the early part of 1914 several cases of plague occurred at our southern ports which made it possible that some of the plague infected rats might be carried by fast freight as far as Indianapolis. Rats and fleas are necessary for the spread of this disease. The two most common rat fleas are *Leomopsylla Cheopis* (Rothschild) and *Ceratophyllis Fasciatus* (Bose). We prefer to call the first variety *Pulex Cheopis*, which is the name given it by the Indian Plague Commission.

Indianapolis was divided up into districts and several different kinds of business were chosen from each district as places to set the French wire traps. The directions given by the Public Health Service for catching rats were carefully followed. The rats caught were brought alive to the laboratory and drowned and then soaked in a 10 per cent. formalin solution. Each rat was then carefully combed for fleas and each flea caught was kept and closely examined and classified. After this the rat was post-mortemed and any pathological condition noted and specimens saved for a microscopical examination.

No macroscopic or microscopic evidence of plague was found. Many pathological conditions were found, particularly in the older rats, very few of which were normal.

The following chart shows the number and kinds of rats for each business as well as distribution of fleas on the rats. All of the 225 fleas caught were *Pulex Cheopis* except one that was *Ceratophyllis* (Bose).

TABLE I. RAT AND FLEA SURVEY.  
*Showing Number and Kind of Rats and Where Found, Also Number and Kind of Fleas.*

WHERE FROM.	Number.	RATS.						Number.	FLEAS, KIND.
		Size.			Sex.				
		Large.	Medium.	Small.	Male.	Female.			
Theatre.....	2	.....	1	1	2	.....	1	Pulex Cheopis.	
Four mills.....	9	.....	5	1	4	5	10	Pulex Cheopis.	
Restaurant.....	10	3	5	2	3	7	12	Pulex Cheopis.	
Department store.....	31	5	5	21	6	25	174	Pulex Cheopis.	
Coal company.....	1	1	.....	.....	.....	1	.....	.....	
Packing company.....	12	4	6	2	2	10	.....	.....	
Paper company.....	5	1	3	1	2	3	.....	.....	
Meat market.....	2	2	.....	.....	2	.....	16	Pulex Cheopis.	
Killing company.....	3	1	2	.....	1	2	9	Pulex Cheopis.	
Feed company.....	2	2	.....	.....	.....	2	.....	Pulex Cheopis.	
Dairy company.....	4	2	1	1	2	2	3	Two Pulex Cheopis, one Ceratophyllus Fasciatus.	
Hotel.....	5	.....	5	.....	1	4	.....	.....	
Total.....	83	24	33	29	25	61	225	.....	



Most of the rats were caught in one of the most prominent department stores down town and it was these rats which harbored the largest number of fleas per rat.

This survey shows that we have all the necessary conditions for an epidemic of plague except the bacilli, with the bacilli present, Indianapolis would have just as severe an epidemic of plague as any city in the United States. Indianapolis is no unusual Indiana city but is typical of them all, so that the danger of plague in Indiana is at all times present everywhere.

## REPORTS ON LABORATORIES VISITED DURING DECEMBER, 1913.

ADA E. SCHWEITZER, M. D.

(Collected as Delegate to the International Congress of Safety and Sanitation, New York.)

The exhibit of Safety and Sanitation was held at the Grand Central Palace, New York. Among others were many exhibits devoted to means of prevention of the spread of communicable diseases; there were shown types of sanitary drinking fountains, methods of water filtration, efficacy of various antiseptics, sweat shop conditions, food analyses, tests for purity, proper first aid, and individual effects of alcohol.

Statistics prepared by the United States army showed that the highest per cent. of admissions to hospitals was due to venereal diseases. More recruits are rejected because of venereal disease than from any other one cause, though alcoholism and diseases of the eye, ear and heart are important.

Deaths from malaria have been reduced from 1.72 per 1,000 in 1898 to .08 in 1911. In 1910 the reported cases of syphilis were 24.7 per 1,000. In 1911, aided by Wassermann tests, the reported cases numbered 40.1 per 1,000. To these salvarsan was administered, shortening period of infectivity. Following the use of sanitary prophylaxis the rate of cases of gonorrhea has been lowered from a maximum of 117.9 in 1908 to 90.5 in 1911.

Typhoid vaccine prophylaxis lowered the admissions for typhoid in 1911 to less than one-third of those for 1909. In 1912 of 10,000 to whom typhoid vaccine was administered one died. Of 10,000 non-vaccinated persons 798 died.

The United States Public Health Service has models showing rat infested houses, quarantine stations, sanatoria, preparation of vaccines and sera, the stages of trachoma, etc. The department of chemistry demonstrated relative food values.

Films illustrating the activities of the United States Public Health Service together with exhibits shown by them were of special interest.

A diagram illustrated the usual origin of typhoid infection in contaminated excreta the germ being carried by fingers, flies or water to food which is conveyed to the mouth.

Agents to prevent the spread of disease are first rat and fly proof manure boxes, preventing breeding; second, fly destroyers, as traps, sticky fly paper, swatters, etc.; third, sanitary garbage disposal; fourth, efficient health officers; fifth, intelligent observance of regulations by citizens to coöperation of doctors.

Method of typhoid vaccination was shown by pictures and the appliances used were on exhibition. Model privies screened to keep out flies and having removable galvanized tubs instead of the old fashioned vault were shown.

For the eradication of plague there was a rat proof barn in contrast to an old style home for rats. Extermination of rats by placing poison and traps in their runways and in sewers, collection and examination of rats for fleas, the fumigation of infested ships by sulphur fumes and the disinfection by superheated steam of all articles taken ashore after lifting quarantine aid in eradication of the plague. Ground squirrels as carriers are destroyed by cyanide gas forced into their underground homes.

In the war on the mosquito, machine ditching is resorted to in draining swamp land. Any stagnant pools are examined for larvae and are treated with oil, as are also the sewers. The larvae of the water beetle introduced into the pools destroy the mosquito larvae.

Trachoma is a contagious disease affecting all races. The exact method of infection is not known. It is more prevalent among the poor in unsanitary surroundings and occurs as inflammation of the inner surface of the lids. The transparent part of the eye becomes glazed. It is prevalent among the Kentucky mountaineers who live in close proximity to each other. It is spread in institutions chiefly by infected children sleeping together or using the same towels. Flies are considered carriers. There were pictures of families who were afflicted and of the successive stages of the disease itself.

The work on rabies was observed in detail at the Hygienic Laboratory, Washington, D. C., and at the New York Research Laboratory. In essentials the technique of preparing virus is quite similar. At the Hygienic Laboratory however, the rabbit which has developed rabies after inoculation is chloroformed, the back is singed and an incision is made along the spinal column with a slight dissection cut at the base of the cerebellum and at the base of the spine above

the point of branching. A sterile bit of gauze is placed under the upper dissected end of the spinal column and a heavy sterile wire wound with a cotton swab is inserted at the lower end. As the upper end of the cord is pushed out the assistant receives it with sterile forceps. Prepared loops of thread are applied at either end of the removed cord which is cut at the middle part and is hung over potassium hydroxide in a glass jar after a small portion has been cut off for contamination test. A small piece is dissected from the severed end at the base of the cerebellum for inoculation purposes. After the cord has been dried the requisite number of days it is cut into pieces and sent to the users, who prepare their own emulsions by grinding up requisite portions and adding isotonic salt solution.

At the New York Research Laboratory the Japanese method for removal of the cord is used. The skin is incised around the tail and low on the body, and is drawn off over the head, care being taken not to touch the back. Incision of the spinal column is made at the upper lumbar region and at the base of the skull. The cord is pushed out from below and is received by an assistant with forceps and placed in a sterile petri dish and is dried in the usual manner. Contamination cultures are made and fresh rabbits inoculated with one inch of a two-day cord. For inoculation one-fifth of an inch of cord is emulsified in 3 c.c. of sodium chloride solution.

In the latter laboratory the smallpox vaccine after tests for contamination are negative is required to show 100 per cent. efficiency by vaccination tests on five children, three on each child. All fifteen scarifications must take. The vaccine is sent out in capillary glass tubes with which the skin may be scarified. A rubber bulb at the opposite end of the tube is used to force the vaccine onto the abraded surface. Vials sent out to schools are estimated at 60 capillary tubes to the c.c. and the skin is abraded with a sterile toothpick. All vaccines should be kept on ice.

Diphtheria antitoxin is standardized by inoculating guinea pigs against a standard unit sent out frequently from Washington.

At the Rockefeller Institute the growth of *Treponema Pallidum* on special media was demonstrated by specimens from the culture shown by dark field illumination under the direction of Dr. Hideyo Noguchi. He also showed specimens of Negri bodies which he had cultivated.

The technique employed in the Government Hospital for the Insane of administering salvarsanized blood serum in cases of paresis was contributed by Dr. Howard O. Knox of the United States Public Health Service at Ellis Island. Neosalvarsan 6/10 gram is

injected intravenously in an adult. Two hours later two ounces of blood are withdrawn from the median basilic vein and centrifuged. The supernatant fluid is injected intraspinaly after first withdrawing an equal amount of spinal fluid by a lumbar puncture. A slip needle is used and the blood pressure ascertained by means of a sphygmomanometer. If the pressure rises above 120 the injection is discontinued.

McNeil and Schwartz were doing valuable work on the complement fixation test for gonococcus. In this work a complete mastery of technique is necessary. All glassware must be new, carefully washed, neutralized and kept neutral. The secret of success depends on the use of a polyvalent gonococcus antigen, as different strains of gonococci differ considerably from one another.

Their technique is given as follows: "The various strains of gonococci are grown on salt-free veal agar, neutral in reaction to phenolphthalein; twenty-four-hour old cultures are washed off the agar slants with distilled water and the resulting suspension is heated for two hours in the water-bath at 56°C. It is then centrifuged and passed through a Berkfeld filter. No salt is added to this antigen until it is desired to use it, when it is made up to 0.9 per cent. strength by adding one part of 9 per cent. saline solution to nine parts of antigen.

The antigen is best preserved in small quantities in sealed tubes, heated to 56°C. for half an hour on three successive days, to insure sterility. If possible, the antigen is standardized with a known positive serum from a clinical case. If this is impossible, immune rabbit serum may be used, provided that the minimum amount of the serum which will completely fix complement is used. An antigen titrated with a highly immune rabbit serum may show perfect fixation in an amount that would fail to show any fixation with the average clinical case, on account of the lower antibody content of the latter. Antigens prepared as above will keep almost indefinitely if kept in sealed tubes free from contamination. The facts seem to prove that a positive reaction denotes the presence of recent activity in the body of a focus of living gonococci.

The laboratory at the Babies Hospital, New York, in charge of Dr. Martha Wollstein, proved an interesting place. The influenza bacillus was grown on blood media made from rabbit's blood aspirated from the heart, 20 c.c. being placed into 50 c.c. of sodium citrate. Fifteen drops of the above was placed in each tube of melted agar cooled to 45° centigrade and mixed well. Plates were poured, cooled and kept in an ice box upside down.

To secure a specimen a swab was hooked over the epiglottis to induce coughing and then rubbed over the surface of a plate. After incubation a cover glass was placed over the surface of the culture. The adherent dew drop colony was fixed with heat, stained by gram and examined for a small Gram negative bacillus. (*Micrococcus catarrhalis* is much larger.)

Stain:—Aniline gentian violet one minute.

Replace by Gram solution.

Replace by 95 per cent. alcohol—Wash.

Counterstain with safranin 1-300 for from 20 to 30 seconds.

The Bordet bacillus found in whooping-cough grows on blood media and on Bordet's special media described in Journal of Experimental Medicine, Vol. XI, 1909, originally in the Annals of the Pasteur Institute, 1906.

In the examination for dysentery bacillus the stool was emulsified and grown in a broth flask for twenty-four hours. Plain agar plates poured, incubated and colonies examined for non-motility and stained by Gram. Six Gram negative non-motile colonies are selected and stab cultures made in dextrose agar. The non-gas formers were run on the sugars, dextrose, maltrose, levulose, lactose and saccharose.

Milk tubes were made.

In taking blood for a culture the child was placed on his back, with his head over the edge of a table and then bled from the external jugular vein with a glass barrel syringe and slip needle. One c.c. of blood was planted in 20 c.c. of broth, and cultures made from a 24-hour growth. Hanging drop examined for motility and film stained by Gram.

Every child on admission has a throat culture taken. One in five showed diphtheroid organisms. All who had numbers of the organisms were isolated and given antitoxin and released on negative culture.

The meningococcus was grown on ascitic agar or sheep serum agar.

In the District Laboratory at Washington, D. C., extensive investigation of the prevalence of bovine tuberculosis was being made by testing milk for the presence of tubercle bacilli. Of 900 cows 497 were condemned as having probable disease of the udder; 87 per cent. of one herd were badly diseased.

The spirit of courtesy and helpfulness shown in all the laboratories visited was in itself an inspiration.

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INDIANA STATE BOARD OF HEALTH

NINTH ANNUAL REPORT

OF THE

Chemical Division of the Laboratory  
of Hygiene

FOR THE

YEAR ENDING SEPTEMBER 30, 1914

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# NINTH ANNUAL REPORT OF THE CHEMICAL DEPARTMENT OF THE LABORATORY OF HYGIENE.

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H. E. BARNARD, Ph.D.

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The work of the Chemical Division of the Laboratory of Hygiene as outlined in this, the ninth report to the State Board of Health, differs but little from that reported in previous years. The report details the activities of the food, drug and water laboratories; it discusses the special problems investigated in each of these laboratories, it tabulates and summarizes the work of the year and compares these results with earlier reports. The special studies of water supply and sewage disposal problems undertaken by the Water Laboratory are given at length. A sanitary survey of the city of Vincennes, which occupied the entire summer, is perhaps the most comprehensive work of the kind yet undertaken, and it is to be hoped that the results secured may be judged of sufficient importance that similar work may be inaugurated in other cities. The work of the year as herein reported has continued along the lines successfully followed since the laboratory was established, and the records here set out are valuable as they show improved conditions, more perfect compliance with laws and a better understanding of the sanitary importance of pure water and proper disposal of sewage.

As in other years, we wish here to express our great appreciation of the support given our work by the people and press of the State. Food control achieves results directly comparable with the support the work receives from manufacturers, distributors and consumers. It has been the endeavor of the department to place all information before the people, and to our success in doing this Indiana owes its excellent reputation as a State where the food laws are respected and the sanitary regulations obeyed.

The department has retained with but little change its corps of chemists, clerks and inspectors whose work has contributed so materially to its development.

Jay Craven, for four years chemist in charge of the Water Laboratory and engineer to the State Board of Health, resigned his position with the department to accept an appointment in the United States Public Health Service which offered larger opportunities for service.

John C. Diggs, for several years a chemist of the department, has been made head of the water laboratory.

Gail Miers Stapp, well trained in chemical work, succeeds Mr. Diggs as assistant chemist.

Allen Lloyd has resigned his position as assistant chemist to accept an appointment as chemist in the laboratories of Sears-Roebuck & Company. His work is being successfully carried on by Cullen Thomas.

A. R. Tucker and Floyd Huff, as undergraduate assistants, have given excellent service in the laboratories, and together with Jay Ford, C. M. Winchester, Fred Donaghy, Willard Hutchings and Loyd Foreman, contributed materially to the success of the sanitary survey of Vincennes. To the last named assistants the thanks of the department and of the State are especially due, because in no other way were they compensated for their valuable service.

Miss Edith Hoffman continues as the efficient head of the clerical force.

The vacancy caused by the resignation of Mrs. Florence Vollrath, statistical clerk of the department, has been filled by Miss Mary Vestal.

The field inspection force, composed of A. W. Bruner, B. W. Cohn, F. W. Tucker, John T. Willett, C. L. Hutchens and Richard White, has not been changed during the year. Mr. John T. Willett has, in addition to caring for food and sanitary work in northern Indiana, given special attention to the enforcement of the Weights and Measures Law.

## RESULTS OF ANALYSES OF FOOD SAMPLES.

During the year, 1,703 samples of food collected by inspectors or sent in by health officers or interested consumers have been examined at the laboratory. Of this number 1,279 samples were legal and 424 illegal, either because they contained ingredients not allowable under the law, such as chemical preservatives, foreign colors or makeweights, or were misbranded or otherwise mislabeled. The percentage of adulteration of foodstuffs as shown by the year's work is 24.7. Upon this basis of comparison the results reported for the year are no improvement over preceding years. This showing should not be taken as evidence that adulterated foods are common in our markets. The inspector sends in only such samples as he believes to be illegal, instead of, as he once did, sending in miscellaneous samples, confident that many of them would prove to be adulterated. As a matter of fact, the illegal samples are

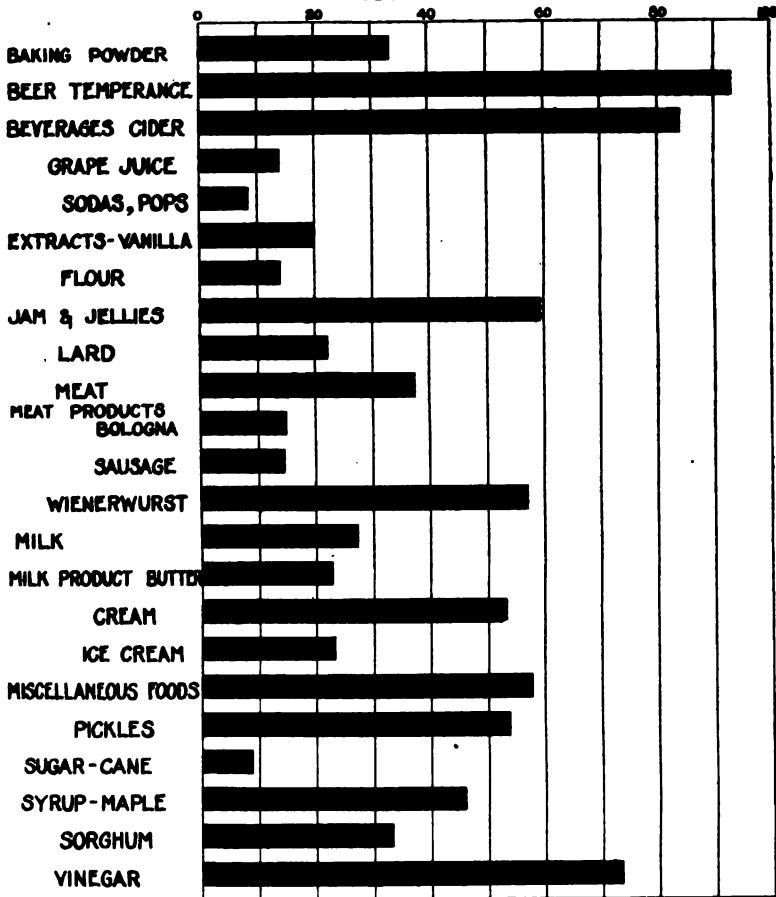
chiefly found in such foods as milk, where the fault is usually that of the presence of dirt; of vinegars, most of which are submitted by farmers who wish to know whether their product is sufficiently matured for sale; of beers sold as temperance beverages, but in fact, containing sufficient alcohol to deny them that distinction, and of ciders, sodas and pops, carelessly labeled as to the presence of artificial color.

The great bulk of the food supply is pure and properly labeled. We are safe in believing that 99 per cent. of all foods delivered at the home is unsophisticated and properly labeled. It is of further satisfaction to know that the adulteration of the remaining one per cent. is for the most part harmless in character. Special reference to the various forms of adulteration practiced on different classes of food will be made under the discussion of such foods in the table following:

RESULT OF ANALYSES OF FOOD SAMPLES FOR THE YEAR ENDING OCTOBER 1st, 1913, TO  
SEPTEMBER 30, 1914.

ARTICLE.	Legal.	Illegal.	Total.	Per Cent Adultera- tion.
Baking Powder .....	6	3	9	33.33
Beer—Temperance .....	1	15	16	93.7
Bread .....	122		122	
Beverages—Cider .....	4	21	25	84.0
Coffee .....	1		1	
Grape Juice .....	6	1	7	14.3
Lime Juice .....	1		1	
Sodas and pops .....	517	50	567	8.8
Whiskey .....	2		2	
Wine .....	1		1	
Canned Corn .....	1		1	
Extracts—Lemon .....	4		4	
Vanilla .....	4	1	5	20.0
Flour .....	6	1	7	14.3
Honey .....	2		2	
Jam and Jelly .....	17	25	42	59.5
Lard .....	31	9	40	22.5
Meat .....	5	3	8	37.5
Meat Products—Bologna .....	17	3	20	15.0
Hamburger .....	2	1	3	33.3
Sausage .....	52	9	61	14.7
Weinerwurst .....	15	20	35	57.2
Milk .....	332	128	460	27.6
Breast Milk .....			16	
Milk Products—Butter .....	27	8	35	22.8
Cheese .....	4		4	
Cream .....	23	26	49	53.1
Evaporated Milk .....	2		2	
Ice Cream .....	68	21	89	23.1
Miscellaneous Foods .....	8	11	19	57.9
Oleomargarine .....	13		13	
Pickles .....	6	7	13	53.8
Sugar—Cane .....	10	1	11	9.1
Maple .....	3		3	
Syrup—Maple .....	7	6	13	46.2
Sorghum .....	6	3	9	33.3
Tomato Products—Catsup .....	3	6	9	66.6
Pulp .....	5		5	
Vinegar .....	21	60	81	74.1
Total .....	1,371	439	1,810	24.25

# PERCENTAGE OF ADULTERATION OF FOODS ANALYZED IN INDIANA 1914



# REPORT FROM THE FOOD LABORATORY.

## DAIRY PRODUCTS.

### MILK.

Of the 457 samples of milk analyzed during the year, 131, or 28.6 per cent., were classed as illegal. Forty-one samples contained less than the required 3.25 per cent. of butter fat; 12 were low both in fat and solids not fat content; 4 contained added water; 80 were slightly dirty and 19 contained such quantities of visible dirt that they were classed as very dirty. Prosecutions were brought in each of the four samples where added water was found, and in each case a conviction was obtained. Many convictions were obtained because of the sale of dirty milk and cream.

The number of milk samples analyzed is too small to warrant the drawing of any conclusions as to the character of the milk supply of the State. The one noticeable fact in the case of the samples examined is the large number of dirty samples. The report for 1911 showed visible dirt in 28 per cent. of all milk samples; 1912, 20 per cent.; 1913, 19.5 per cent.

### MILKS—ILLEGAL.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
28093	Sent in from.....	South Bend.....	4.2	Slightly dirty.
28095	Sent in from.....	South Bend.....	4.1	Slightly dirty.
28097	Sent in from.....	South Bend.....	4.5	Slightly dirty.
28098	Sent in from.....	South Bend.....	3.8	Slightly dirty.
28099	Sent in from.....	South Bend.....	4.8	Slightly dirty.
28101	Sent in from.....	South Bend.....	5.0	Slightly dirty.
28103	Sent in from.....	South Bend.....	4.2	Slightly dirty.
28105	Sent in from.....	South Bend.....	5.2	Slightly dirty.
28234	Marshal Quackenbush.....	Bloomington.....	4.9	Slightly dirty.
28238	Brock & Shaw.....	Bloomington.....	3.9	Slightly dirty.
28279	Shahadey Bros.....	Terre Haute.....	2.5	Low in butter fat.
28280	Shahadey Bros.....	Terre Haute.....	2.3	Low in butter fat.
28284	Sent in from.....	South Bend.....	4.0	Slightly dirty.
28285	Sent in from.....	South Bend.....	4.5	Slightly dirty.
28286	Sent in from.....	South Bend.....	4.5	Slightly dirty.
28289	Sent in from.....	South Bend.....	4.5	Slightly dirty.
28296	Sent in from.....	South Bend.....	5.1	Slightly dirty.
28297	Sent in from.....	South Bend.....	3.9	Slightly dirty.
28298	Sent in from.....	South Bend.....	4.5	Slightly dirty.
28322	J. S. Ladd.....	Terre Haute.....	8.1	Slightly dirty.
28323	H. M. Reese.....	Terre Haute.....	3.8	Slightly dirty.
28324	A. J. Maas.....	Terre Haute.....	3.8	Slightly dirty.
28339	J. W. Phillips.....	Terre Haute.....	2.2	Low in fat.
28340	Summers & Stumpp.....	Terre Haute.....	2.6	Low in fat.
28342	Sent in from.....	Hammond.....	3.1	Slightly dirty.
28343	Sent in from.....	Hammond.....	3.2	Slightly dirty.
28358	Sent in from.....	Hammond.....	6.1	Slightly dirty.
28359	Sent in from.....	Hammond.....	3.8	Slightly dirty.
28361	Sent in from.....	Hammond.....	4.1	Slightly dirty.
28369	C. Hershman.....	Terre Haute.....	5.7	Low in fat.

## MILKS—ILLEGAL—Continued.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
26372	H. L. Froeb	Terre Haute	6.2	Slightly dirty.
26374	Lawrence Dencki	Terre Haute	4.2	Slightly dirty.
26375	George Frise	Terre Haute	4.6	Slightly dirty.
26376	William Reese	Terre Haute	4.6	Slightly dirty.
26452	Fred Herron	Brasil	4.0	Slightly dirty.
26455	J. A. Shattuck	Brasil	4.9	Slightly dirty.
26457	Anderson & Hodge	Brasil	4.6	Slightly dirty.
26458	G. E. Anderson	Brasil	4.0	Slightly dirty.
26477	George McCullough	New Albany	4.8	Slightly dirty.
26479	Charles Zaff	New Albany	4.5	Slightly dirty.
26480	Charles Zaff	New Albany	4.9	Slightly dirty.
26481	John Payton	New Albany	4.8	Visible dirt.
26482	John Stran	New Albany	4.4	Visible dirt.
26483	S Sherman	New Albany	5.5	Slightly dirty.
26484	Raymond Zurschmide	New Albany	4.3	Slightly dirty.
26485	Fred Ramsier	New Albany	5.2	Slightly dirty.
26486	F. E. Jollisaint	New Albany	4.9	Slightly dirty.
26487	J. W. Tipton	New Albany	5.7	Visible dirt.
26488	C. W. Brubeck	New Albany	4.6	Slightly dirty.
26489	C. W. Brubeck	New Albany	2.8	Low in butter fat.
26776	Van D. Farr	Marion	3.2	Low in butter fat.
26777	Van D. Farr	Marion	2.8	Low in fats.
26784	Henry Byren	North Vernon	3.0	Low in fats.
26785	R. B. Vanatta	North Vernon	1.8	Low in butter fat.
26789	Henry Byren	North Vernon	3.2	Low in fat and solids not fat.
26862	Bratton & Racy	Vincennes	3.7	Very dirty.
26878	Vanhuse	Valparaiso	3.7	Very dirty.
26879	Schreiber	Cedar Lake	4.0	Very dirty.
26880	Schultz	Valparaiso	4.2	Very dirty.
26881	A. Johnson	Hobart	4.9	Very dirty.
26882	Lynberg	Valparaiso	4.0	Very dirty.
26883	J. Minsenerger	Cedar Lake	3.8	Very dirty.
26884	A. Schrock	Valparaiso	4.4	Very dirty.
26885	W. Johnson	Valparaiso	3.25	Very dirty.
26886	Anderson Bros	Valparaiso	4.0	Very dirty.
26887	O. F. Swanson	Valparaiso	3.6	Very dirty.
26888	C. Maganason	Valparaiso	4.1	Very dirty.
26889	S. M. Ferris	Valparaiso	3.6	Very dirty.
26893	Dierking	Aurora	4.0	Very dirty.
26895	Vinson	Lawrenceburg	3.6	Very dirty.
26901	Dierking	Aurora	2.0	Below standard in fat and solids not fat.
26910	Ben Wagner Milk Wagon	Decatur	2.8	Low in fat and solids not fat.
26911	Ed. Tultmon	Decatur	3.0	Low in butter fat.
27060	Arthur Wolf	South Bend	2.8	Low in fat and solids not fat.
27108	A. Corey	Terre Haute	3.1	Low in fat and solids not fat.
27109	T. Wild	Terre Haute	2.8	Low in fat and solids not fat.
27110	H. N. Reis	Terre Haute	2.8	Low in butter fat.
27121	Sent in from	Marion	5.8	Visible dirt.
27205	Sent in from	Muncie	3.6	Visible dirt.
27206	Sent in from	Muncie	5.7	Visible dirt.
27207	Boyd Bros.	Muncie	3.6	Visible dirt.
27208	Summers	Muncie	3.4	Visible dirt.
27209	Stradling	Muncie	3.8	Visible dirt.
27210	Campbell	Muncie	2.5	Low in butter fat.
27298	Wm. Johnson	Valparaiso	1.6	Low in fat; visible dirt.
27334	Terre Haute Milk & Cream Co.	Terre Haute	2.6	Low in fat and solids not fat.
27335	Valentine Drug Co.	Terre Haute	4.3	Very dirty.
27336	J. L. Hance	Terre Haute	3.0	Low in fat and solids not fat;
27338	Charles Henning	Terre Haute		very dirty.
27339	Morris Dairy	Terre Haute	1.8	Low in butter fat.
27340	Gustava Nalkemper	Terre Haute	4.0	Visible dirt.
27341	L. R. Rockwood	Terre Haute	3.5	Visible dirt.
27342	Fell Bros	Terre Haute	2.2	Low in butter fat.
27402	Sent in from	Hammond	3.0	Low in fat and solids not fat;
				visible dirt.
27450	Fred Zurschmide	New Albany	3.0	Low in fat and solids not fat;
				visible dirt.
27461	Mrs. A. L. O'Bryan	New Albany	3.0	Low in fat and solids not fat;
				added water.
27630	Frank Livengood	Marion	2.6	Low in butter fat.
27638	Wm. Whiteman	Marion	3.0	Low in butter fat.
27646	McGuire & Edwards	Marion	2.8	Low in butter fat.
27660	Sent in from	South Bend	5.0	Visible dirt.

## MILKS—ILLEGAL—Continued.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
27665	Sent in from.....	South Bend.....	4.1	Visible dirt.
27668	Sent in from.....	South Bend.....	3.4	Visible dirt.
27669	Sent in from.....	South Bend.....	3.7	Visible dirt.
27670	Sent in from.....	South Bend.....	4.5	Visible dirt.
27747	James Pardick.....	Richmond.....	2.7	Low in fat and solids not fat; added water.
27803	E. J. Worth.....	Princeton.....	3.0	Low in butter fat; added water.
27811	Van Bigger.....	Princeton.....	4.9	Visible dirt.
27819	Franklin Dairy Co.....	Franklin.....	4.3	Visible dirt.
27820	Franklin Dairy Co.....	Franklin.....	4.3	Visible dirt.
27833	W. K. Catron.....	Muncie.....	2.5	Low in butter fat.
27849	Fell Bros.....	Terre Haute.....	4.3	Visible dirt.
27852	J. L. Hauce.....	Terre Haute.....	1.6	Low in butter fat.
27853	Sent in from.....	Terre Haute.....	2.3	Low in butter fat.
27854	Fleming & Son.....	Terre Haute.....	2.4	Low in butter fat.
27855	Walter M. Denebie.....	Terre Haute.....	3.0	Low in butter fat.
27906	W. B. Cantwell.....	Vincennes.....	4.2	Visible dirt.
27909	Hogue Bros.....	Vincennes.....	3.7	Visible dirt.
27910	W. B. Cantwell.....	Vincennes.....	4.3	Visible dirt.
27912	W. S. Alexander.....	Vincennes.....	4.0	Visible dirt.
27913	Chas. D. Cantwell.....	Vincennes.....	4.0	Visible dirt.
27954	Vincennes Milk & Cream Co.....	Vincennes.....	3.6	Visible dirt.
27956	P. L. Johnson.....	Vincennes.....	5.7	Visible dirt.
27969	Harry Tindall.....	Anderson.....	3.0	Low in butter fat.
27972	Nora James.....	Anderson.....	3.0	Low in butter fat.
27996	Sent in from.....	Evansville.....	3.5	Visible dirt.
27997	Sent in from.....	Evansville.....	3.6	Visible dirt.
27998	Sent in from.....	Evansville.....	3.5	Visible dirt.
27999	Sent in from.....	Evansville.....	3.6	Visible dirt.
28002	Sent in from.....	Evansville.....	2.9	Low in fat; added water; visible dirt.
28248	Sent in from.....	Indianapolis.....	7.2	Low in butter fat.
28249	Sent in from.....	Indianapolis.....	7.2	Low in butter fat.

## BREAST MILK.

Although the analysis of breast milk was not contemplated as essential in the enforcement of the food and drug law it has been the policy of the laboratory to analyze samples submitted by inquiring physicians. The results of the analyses are reported because of their clinical value. Attention is directed to the great variation in fat content.

## BREAST MILK.

Laboratory No.	Sent in by.	Per Cent. of Fat.	Per Cent. of Protein N x 6.25.	Remarks.
26070	Dr. H. A. Kelsey, Kokomo.....	1.6	1.12	
26262	Columbia Grocery, Indianapolis.....	2.7	1.365	Normal milk.
26392	Dr. J. H. Morrison, Hartsville.....	1.64	2.1	Nitrogen .33
26440	Rev. A. B. Gaebe, Julietta.....	5.8	1.19	Lactose 6.2.
26638	Dr. J. A. Rawley, Brazil.....	3.5	1.821	
26756	Dr. J. H. Morrison, Hartsville.....	2.9	4.1	
26824	Dr. M. A. Farlow, Milroy.....	4.8		
26944	Mr. Beckman, Noblesville.....	6.0	3.57	
27124	Dr. E. C. Denny, Scotland.....	1.1		
27122	Dr. J. H. Bowser, Syracuse.....	5.0		
27211	A. K. S. Etter, Indianapolis.....	1.68	1.68	Nitrogen .268.
27915	Dr. Jas. T. Arthur, Marion.....	1.8	1.63	
28284	Dr. O. H. Rees, Knightstown.....	1.4		
28962	H. T. Hughes, Evansville.....	1.2	1.75	Lactose 4.6.
28870	R. M. Grable, M. D., Lucerne.....	5.0	1.42	Nitrogen .23.
28882	Dr. Taylor, Indianapolis.....	2.8	2.45	Nitrogen .436.



## BUTTER.

Of the 35 samples of butter analyzed, 27 were legal and 8 illegal. Twelve samples were submitted by purchasers who were suspicious of the quality of the butter, but in every case save one the butter was pure. Following the table of legal and illegal butters is a special table showing a comparative analysis of samples of butter purchased on the Indiana market or taken from local storage houses. One of the samples analyzed was imported from New Zealand and the analytical data is interesting in that it shows a very close resemblance to that of normal freshly made butter.

## BUTTER—LEGAL.

Laboratory No.	Retailer.	Collected.	Butyro 40° C.	Reichert Meissl Number.	Moisture.
26076	C. H. Howland, Sherman	Indianapolis	43.8	25.5	11.9
26079	Riaher Bros.	Muncie	40.4	28.2	
26080	Alvin K. Ropp	Goshen	41.0	24.0	
26226	P. H. Martin	Peru	42.0		
26273	Harry Drapper	Kokomo			
26399	W. F. Taylor	W. Terre Haute	43.35	24.86	
26443	Pedler Bros.	W. Terre Haute	43.55	23.32	
26446	Harry Mellroy	W. Terre Haute	42.3	25.96	
26637	Sent in from	Terre Haute	43.5	25.6	
26706	Sent in from	Elkhart	41.0		
26784	Sent in from	Hammond	42.3	29.05	11.14
26802	Glenn D. Peters	Hammond	42.4	27.6	
26940	Sent in from	Indianapolis	43.5	25.7	
26941	Sent in from	Richmond	43.0	25.1	
26973	Sent in from	Indianapolis	42.3	27.0	
26996	Mrs. Emma Wesner	Tipton	44.0	25.8	
27094	Ray Wert	Lagrange			
27098	Green & Bank	Gary	43.2	27.07	7.6
27099	O. G. Fleming	Gary	43.0	28.01	7.5
27102	B. Fishbein	Indianapolis	44.2		14.3
27157	J. W. Snider	Michigan City			
27400	Sent in from	Indianapolis	42.7	30.5	
27650	Sent in from	Indianapolis	42.8		
27691	Indiana Refrigerating Co.	Indianapolis			
28872	Wm. H. Block Co.	Indianapolis			
28874	Wm. H. Block Co.	Indianapolis			
28875	Wm. H. Block Co.	Indianapolis			

## BUTTER—ILLEGAL.

Laboratory No.	Retailer.	Collected.	Butyro 40° C.	Reichert Meissl Number.	Moisture.
26382	Lake County Creamery	Hammond	51.0	1.98	9.2
26469	J. D. Bonine & Son	Rochester	49.2	4.6	8.3
26528	John Kenworthy	Seymour			
26939	C. C. Carey	Michigan City			
27100	August Famp.	Indianapolis	50.1	2.85	6.8
27328	Mr. Williams	Indianapolis	49.7		
27404	Elizabeth Williams	Indianapolis	49.3	2.65	9.97
27649	Sent in from	Indianapolis	49.7		

## COMPARATIVE ANALYSIS.

Brand of Butter.	Moist- ure.	Case- in.	Ash.	Na Cl.	Butyro at 40° C.	Reichert Meisn.	Fat.
Blue Valley.....	12.43%	0.95%	4.41%	4.12%	42.2	28	82.21%
Polka Best.....	12.07%	0.65%	5.13%	4.82%	42.2	28.7	82.17%
New Zealand.....	14.18%	0.67%	2.29%	2.17%	43.0	30.5	82.88%
Glossbrenner-Dodge Co., Perfection.....	10.72%	0.97%	2.10%	1.97%	43.3	27.5	86.21%
Furnas' Own Make.....	10.99%	1.38%	2.23%	2.22%	42.6	28.5	85.39%
American Pure Creamery.....	12.68%	0.80%	2.33%	2.22%	42.7	28.5	84.19%
Cottage Grove.....	13.34%	0.66%	2.75%	2.58%	42.6	26.5	83.25%
Schlusser's Oak Grove (6-12-13).....	11.82%	0.66%	3.02%	2.82%	42.4	27.5	84.49%
Kingan Storage Butter (7-13).....	14.16%	0.56%	2.38%	2.25%	43.1	29.5	82.90%
Kingan Storage Butter (7-21-13).....	13.01%	0.79%	2.57%	2.39%	43.0	31.0	83.63%
Kingan Storage Butter.....	14.16%	0.80%	5.66%	5.22%	43.5	32.5	79.38%
Nances Creamery.....	15.83%	0.95%	1.62%	1.58%	.....	.....	83.59%

## CREAM.

Forty-nine samples of cream were analyzed, of which 28 were passed as pure and 21 were found to be illegal. Five of the illegal samples were very dirty and 15 contained less than the required butter fat content.

## CHEESE—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of Fat.	Remarks.
26325	Alvord B. Cosgrove, Laporte.....	42.0	No arsenic or alkaloids.
26310	S. J. Goldstein, Terre Haute.....		
26600	J. P. Hiller, Ridgeville.....		
27155	F. W. Snyder, Michigan City.....		

## CREAM—LEGAL.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
26113	Benedict & Company.....	Indianapolis.....	18.4	Slightly dirty.
26215	Benedict & Company.....	Indianapolis.....	21.0	
26217	Benedict & Company.....	Indianapolis.....	20.0	
26456	J. A. Shattuck.....	Brasil.....	22.4	
26614	Henry Ellwanger.....	Marion.....	20.4	
26615	Hornor Wagner.....	Marion.....	18.0	
26623	J. D. Carlin.....	Indianapolis.....	18.4	
26659	A. A. Crutchfield.....	Indianapolis.....	15.9	
26660	W. T. Myers.....	Indianapolis.....	18.0	
26666	Sent in from.....	Aurora.....	19.2	
26670	G. J. Hammel.....	Indianapolis.....	16.0	
26679	Frank Gross.....	Indianapolis.....	17.2	
26707	Geiger Company.....	Indianapolis.....	16.4	
26708	Wm. Block Company.....	Indianapolis.....	17.9	
26709	Geiger Company.....	Indianapolis.....	15.6	
26782	Benedict Company.....	Indianapolis.....	22.0	No formaldehyde.
26788	Benedict Company.....	Indianapolis.....	21.6	
26790	Scudder Creamery.....	Indianapolis.....	18.0	
26818	Webber Creamery.....	Indianapolis.....	18.8	
26819	Webber Creamery.....	Indianapolis.....	19.2	
27261	Sent in from.....	Muncie.....	18.0	
27303	Politson & Sarnis.....	Linton.....	20.8	
27477	Brubeck & Son.....	New Albany.....	20.4	
27749	Mrs. M. I. Scudder.....	Bridgeport.....	19.0	
27857	C. L. Brown.....	Terre Haute.....	25.0	
27911	Wm. S. Alexander.....	Vincennes.....	24.0	No formaldehyde.
27955	Brooksmith & Vorn.....	Vincennes.....	19.2	No formaldehyde.
28247	Mrs. I. B. Scudder.....	Bridgeport.....	21.6	

## CREAM—ILLEGAL.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
26114	Mr. Bowman.....	Morgantown.....	17.2	Low in fat.
26320	T. H. Pure Milk & Ice Cream Co.	Terre Haute.....	22.2	Viable dirt.
26463	Mrs. Jasper Tilberry.....	Ft. Wayne.....		Viable dirt.
26544	William Gorman.....	New Castle.....		Viable dirt.
26662	Charles F. Wood.....	Indianapolis.....	11.6	Low in fat.
26787	Liekling Cream Co.....	Indianapolis.....	14.4	Low in fat.
26870	Webber Creamer Co.....	Indianapolis.....		
26872	Bowman Cream Co.....	Indianapolis.....		
26877	J. Polypolis.....	Hammond.....	12.4	Low in fat.
26987	Wm. H. Block Co.....	Indianapolis.....	15.2	Low in fat.
27190	Sent in from.....	Lafayette.....	35.0	Misbranded.
27200	Mr. McAllister.....	Muncie.....	15.2	Viable dirt.
27337	F. A. France.....	Terre Haute.....	15.5	Low in fat.
27468	P. J. Pfaffer.....	New Albany.....	12.8	Low in fat.
27471	Chas. Zapp.....	New Albany.....	16.0	Low in fat.
27817	Mrs. I. B. Seudder.....	Bridgeport.....	15.6	Low in fat.
27826	Frank Kibler.....	Muncie.....	17.2	Low in fat.
27837	O. P. Janer.....	Muncie.....	17.2	Low in fat.
27838	J. C. McAllister.....	Muncie.....	15.6	Low in fat.
27934	Patterson & Son.....	Marion.....	10.0	Low in fat; very dirty.
27945	John Sohn.....	Marion.....	12.5	Low in fat.

## ICE CREAM.

Eighty-eight samples of ice cream were analyzed during the year, 67 of which were up to the standard in butter fat content. Of the 21 illegal samples 19 were so classed because the butter fat content was below the required 8 per cent. In two cases ice creams were found to contain starch evidently added as a thickener.

## ICE CREAM—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Per Cent. of Fat.
26100	Sent in from.....	South Bend.....	10.0
26230	Bloomington Creamery Co.....	Bloomington.....	8.4
26231	George Beuckhart.....	Bloomington.....	10.6
26232	George Politzer.....	Bloomington.....	10.1
26233	Henry & Kerr.....	Bloomington.....	10.8
26405	R. W. Furnas.....	Terre Haute.....	8.6
26406	E. H. Wilvert.....	Terre Haute.....	10.0
26459	W. C. Chromyer.....	Brasil.....	9.2
26460	W. C. Chromyer.....	Brasil.....	8.0
26461	J. Spugnardi.....	Brasil.....	8.2
26799	W. H. Block Co.....	Indianapolis.....	8.2
26923	Sent in from.....	South Bend.....	16.0
26924	John R. Noble.....	South Bend.....	11.4
26925	O. Mennucci.....	South Bend.....	12.0
27090	Sent in from.....	South Bend.....	8.8
27119	E. Schmegman.....	Richmond.....	12.0
27127	Haywood & Villinger.....	Lafayette.....	11.6
27129	Mr. Chamberlins.....	Lafayette.....	8.8
27137	J. D. Bartlett.....	Lafayette.....	8.0
27133	Lee Glats.....	Lafayette.....	11.6
27135	Lafayette Ice Cream Co.....	Lafayette.....	8.4
27136	George Weigle.....	Lafayette.....	29.0
27176	Jessup & Antrim.....	Indianapolis.....	8.0
27202	Sent in from.....	Muncie.....	13.4
27203	Sent in from.....	Muncie.....	9.6
27204	Sent in from.....	Muncie.....	8.4
27301	Politsan & Sarais.....	Linton.....	8.2
27313	New York Candy Kitchen.....	South Bend.....	13.2

## ICE CREAM—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Per Cent. of Fat.
27314	Hollings-Turner Co.	South Bend	9.0
27315	John R. Noble	South Bend	9.0
27316	Sent in from	South Bend	13.2
27405	Macks Aufulgood	Peru	8.0
27437	George Demar	Aurora	8.4
27441	French Bros	Cincinnati	10.4
27455	E. M. Grants	New Albany	8.8
27447	Herman Kleffer	Lawrenceburg	8.0
27448	L. W. Gramen	Lawrenceburg	8.0
27456	Ollie Owens	New Albany	8.4
27464	W. C. Strauch	New Albany	10.0
27466	P. J. Pfeffer	New Albany	11.2
27472	David Brubeck	New Albany	8.8
27472	Burd & Stratton	New Albany	8.8
27475	John S. Haffen	New Albany	9.0
27476	F. M. Kirby & Co.	New Albany	8.0
27486	J. Cosmos	North Vernon	8.0
27490	J. Cosmos	North Vernon	8.2
27491	J. Cosmos	North Vernon	8.2
27553	Ballard Ice Cream Co.	Indianapolis	8.0
27554	G. A. Bauckhart	Bloomington	13.2
27555	Johnson Bros	Bloomington	8.6
27556	Bloomington Creamery Co.	Bloomington	8.0
27558	Henry & Kerr	Bloomington	9.2
27559	Littleler & Son	Bloomington	8.0
27569	Sent in from	Hammond	13.2
27611	Sent in from	Terre Haute	8.0
27612	Sent in from	Terre Haute	8.8
27613	Sent in from	Terre Haute	10.4
27755	C. H. Dryhead	Franklin	8.4
27756	Franklin Dairy Co.	Franklin	8.4
27808	Wells Ice Cream Co.	Princeton	8.0
27809	E. E. Purdy	Princeton	14.0
27810	Wells Ice Cream Co.	Princeton	8.8
27900	George Chopins	Anderson	8.0
27907	A. W. Prindle	Vincennes	8.0
27908	Zarafonitis Bros.	Vincennes	9.0
27970	H. A. Kimberlin	Anderson	8.0
28000	Sent in from	Evansville	7.8
28001	Sent in from	Evansville	8.4

## ICE CREAM—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Per Cent. of Fat.	Remarks.
28063	Sent in from	South Bend	7.0	Low in fat.
28450	Model Ice Cream Co.	Terre Haute	6.6	Low in fat.
28609	Sent in from	Marion	7.2	Low in fat.
27302	Goldberg Candy Palace	Linton	7.0	Low in fat.
27406	Howard & Son	Peru	8.6	Starch present.
27436	G. Rains	Cochran	4.8	Low in fat.
27444	H. Kneffenberger	Aurora	6.0	Low in fat.
27460	James Williams	New Albany	4.8	Low in fat.
27485	Carter & O'Havner	North Vernon	6.0	Low in fat.
27489	Carter & O'Havner	North Vernon	6.0	Low in fat.
27752	Max Hamer	Franklin	6.0	Low in fat.
27753	Max Hamer	Franklin	6.0	Low in fat.
27754	C. H. Dryhead	Franklin	7.6	Low in fat.
27757	Franklin Dairy Co.	Franklin	6.4	Low in fat.
27807	Hallett & Woods	Princeton	7.2	Low in fat.
27863	Vincennes Milk & Cream Co.	Vincennes	8.0	Starch present.
27869	Will Lagle	Anderson	4.2	Low in fat.
27964	Standard Ice Cream Co.	Anderson	5.6	Low in fat.
27973	Purnell Ice Cream Co.	Anderson	3.2	Low in fat.
28122	B. M. Raines	Terre Haute	6.8	Low in fat.
28246	Marion Milk and Cream Co.	Marion	4.0	Low in fat.

## BEVERAGES.

## TEMPERANCE BEERS.

Sixteen samples of so-called temperance beer were analyzed during the year. Of this number one was classed as legal and 15 illegal. The illegal samples were so classed because in every instance they contained more than one-half of one per cent. of alcohol established by the liquor law as the limit for malted and fermented beverages. In nearly every case the alcohol content of the so-called temperance beers approximated that of the usual product of the brewery.

## TEMPERANCE BEERS—ILLEGAL.

Laboratory No.	Article.	Manufacturer or Retailer.	Immersion Reading.	Alcohol by Volume.	Remarks.
26810	No Beer	T. M. Morton, Anderson	16.2	1.06	High in alcohol.
26811	Clear	J. A. Mosbaugh, Tipton	18.3	2.76	High in alcohol.
26813	Clear	J. A. Mosbaugh, Tipton	18.3	2.76	High in alcohol.
26968	No Beer	Harry Carpenter, Petersburg	18.4	2.84	High in alcohol.
27075	Temperance Beer	Tell City Brewing Co., Tell City	19.7	3.81	High in alcohol.
27076	Temperance Beer	Tell City Brewing Co., Tell City	19.0	3.29	High in alcohol.
27536	Maltina	Paul Reising, New Albany	19.7	3.81	High in alcohol.
27585	Temperance Beer	Sent in from Evansville		2.52	High in alcohol.
27927	Temperance Beer	Sent in from Evansville	18.0	2.52	High in alcohol.
27928	Temperance Beer	Sent in from Evansville	18.0	2.52	High in alcohol.
27930	Temperance Beer	Metzger Bros., Flora	16.0	.89	High in alcohol.
27931	Temperance Beer	Metzger Bros., Flora	16.0	.89	High in alcohol.
28294	Ambrosia	Ira G. Short, Pekin	16.7	1.46	High in alcohol.
28296	Jingo	James Dalton, Salem	21.0	4.80	High in alcohol.
28299	Temperance Beer	James W. McCarty, Washington	19.7	3.81	High in alcohol.

## CIDER.

Of the 37 samples of apple cider analyzed during the year but four samples were classed as legal. Many of the illegal samples were not true ciders but were the artificial products sold more or less surreptitiously in so-called dry territory. Their alcohol content is usually high and their only claim to the name of cider is the fact that they are manufactured from an apple base. In nine cases ciders contained benzoic acid and in three cases ciders were sweetened with saccharin.

## CIDERS—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Preservatives.			Remarks.
		Saccharin.	Benzoic Acid.	Salicylic Acid.	
26573	Henry Mesley, Akron.....	None.....	None.....	None.....	Not a pure cider.
26628	Wm. C. Smith, Delphi.....	None.....	Present.....	None.....	
26803	George Maxwell, Georgetown.....	None.....	None.....	None.....	Not a pure cider.
26804	Bills & Patrick, Milltown.....	None.....	None.....	None.....	Not a pure cider.
26805	Walker & Cadwallider, Milltown.....	None.....	None.....	None.....	Not a pure cider.
26807	John Langan & Son, Tipton.....	None.....	None.....	None.....	Not a pure cider.
26808	Old Fort Cider Co., Fort Wayne.....	None.....	None.....	None.....	Not a pure cider.
26809	Old Fort Cider Co., Ft. Wayne.....	None.....	None.....	None.....	Not a pure cider.
26814	Old Fort Cider Co., Ft. Wayne.....	None.....	None.....	None.....	Not a pure cider.
26815	C. E. McAvoy, Tipton.....	None.....	None.....	None.....	Not a pure cider.
27150	Sanitary Bottle Co., Ind. Harbor.....	Present.....	Present.....	None.....	
27192	C. Whittaker, Shelbyville.....	None.....	None.....	None.....	Improperly labelled.
27343	Sent in from Fowler.....	None.....	Present.....	None.....	
27606	H. W. Gagen, Lafayette.....	None.....	Present.....	None.....	
27542	John Benedict, Marion.....	None.....	None.....	None.....	Improperly labelled.
27699	John Benedict, Marion.....	None.....	None.....	None.....	Improperly labelled.
27714	P. D. Ferguson, Connersville.....	None.....	Present.....	None.....	
27986	Crystal Bottle Works, Ft. Wayne.....	None.....	Present.....	None.....	
28048	W. Griesinger, South Bend.....	Present.....	Present.....	None.....	
28276	Progress Bottle Works, Rochester.....	None.....	Present.....	None.....	
28283	Sanitary Bottling Wks., Ind. Harbor.....	Present.....	Present.....	None.....	

## SUMMER DRINKS.

Special attention has been given to the composition of the beverages classed under the general heading of summer drinks. The sanitary condition of the establishments from which the samples were collected is discussed on page 98 of this report in connection with the sanitary inspection work of the year.

Five hundred and seventeen of the 567 samples analyzed are classed as pure, that is, they are properly labeled and free from preservatives. Twenty-five of the 50 illegal samples are so-called because of the presence of saccharin; 21 contained benzoic acid; 8 samples showed the presence of salicylic acid. It is to be noted however, that salicylic acid is rarely present except in beverages flavored with oil of wintergreen and in such cases the test for salicylic acid cannot be assumed to be proof of its addition as a preservative. It is interesting to note that many of the samples containing saccharin also contained benzoic acid. In other words, the bottler who is willing to violate the law by using saccharin commits a double violation by using benzoate of soda.

## SUMMER DRINKS—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Brand.	Preservatives or Artificial Sweetener.
26542	James Schemmerhorn, Warren	Orange Cider	None.
27289	Merchants Soda Co., Indianapolis	Orange Cider	None.
27356	Gardner Bros., Greencastle	Orange Cider	None.
27366	Elwood Bottling Works, Elwood	Orange Cider	None.
27377	Taylor & Nicholson, New Castle	Orange Cider	None.
27379	Balling & Boyce, Richmond	Orange Cider	None.
27429	Home Bottling Works, Anderson	Orange Cider	None.
27433	J. C. Kreusch, Anderson	Orange Cider	None.
27521	Bedford Bottling Works, Bedford	Orange Cider	None.
27524	Lebanon Bottling Works, Lebanon	Orange Cider	None.
27525	W. S. Lane, French Lick	Orange Cider	None.
27578	I. B. Beverage Co., Indiana Harbor	Orange Cider	None.
27598	Bohrer Bottling Works, Lafayette	Orange Cider	None.
27680	J. T. Rademaker, Monon	Orange Cider	None.
27722	Magie City Bottling Works, Muncie	Orange Cider	None.
27726	City Bottling Works, Muncie	Orange Cider	None.
27770	Union City Bottling Works, Union City	Orange Cider	None.
27776	Portland Bottling Works, Portland	Orange Cider	None.
27781	City Bottling Works, Columbus	Orange Cider	None.
27787	Seymour Bottling Works, Seymour	Orange Cider	None.
27859	J. Dowdell, Altona	Orange Cider	None.
27876	Columbia City Bottle Works, Columbia City	Orange Cider	None.
27883	H. L. Conter, Decatur	Orange Cider	None.
27896	Lena Bros., Ft. Wayne	Orange Cider	None.
27976	Wm. Schuele, Ft. Wayne	Orange Cider	None.
28116	City Bottling Works, Auburn	Orange Cider	None.
28149	B. Cassidy, W. Terre Haute	Orange Cider	None.
28155	Sullivan Bottling Works, Sullivan	Cherry Cider	None.
28156	Sullivan Bottling Works, Sullivan	Orange Cider	None.
28161	J. Hunter, Brazil	Orange Cider	None.
28164	C. Stork, Terre Haute	Orange Cider	None.
28172	Coca Cola Co., Terre Haute	Orange Cider	None.
28173	H. Becker, Terre Haute	Orange Cider	None.
28190	Coca Cola Co., Terre Haute	Grape Cider	None.
28205	Erbert Bros., Plymouth	Orange Cider	None.
28239	W. B. Enyart, Logansport	Orange Cider	None.
28244	L. L. Rarick, Warsaw	Orange Cider	None.
28258	H. L. Sharp, Delphi	Orange Cider	None.
28268	Modt & Krutser, Peru	Orange Cider	None.
28301	Byrd Bros., Terre Haute	Orange Cider	None.
28939	Standard Bottling Wks., Michigan City	Orange Cider	None.
28951	H. Berlin, South Bend	Orange Cider	None.
26306	L. Rose & Co.	Lime Juice	None.
26572	Elmer Borden, Rochester	Grape Punch	None.
26636	Eitel Bottling Works, Tipton	Scotch-hop-ale	Artificial color and flavor.
27022	Carmichael & Severns, Kokomo	Cream Pop	Artificial color.
27023	Carmichael & Severns, Kokomo	Strawberry Pop	Artificial color and flavor.
27024	Carmichael & Severns, Kokomo	Grape Pop	Artificial color and flavor.
27067	Carmichael & Severns, Kokomo	Ginger Ale	Artificial color and flavor.
27088	Carmichael & Severns, Kokomo	Lemon Sour	Artificial color and flavor.
27148	Lake County Bottling Works, E. Chicago	Pop	None.
27149	Lake County Bottling Works, E. Chicago	Pop	None.
27173	Lake County Bottling Works, E. Chicago	Root Beer	None.
27174	Lake County Bottling Works, E. Chicago	Soda Water	None.
27103	C. Whittaker, Shelbyville	Cream Soda	None.
27106	C. Whittaker, Shelbyville	Soda Water	None.
27107	C. Whittaker, Shelbyville	Cream Soda	None.
27108	L. Rehme, Shelbyville	Soda Water	None.
27214	Lee Yunker, Indianapolis	Lemon Sour	None.
27218	Is Bottling Works, Indianapolis	Ginger Ale	None.
27228	L. A. Sattinger, Indianapolis	Lemon Sour	None.
27230	L. A. Sattinger, Indianapolis	White Soda	None.
27231	L. A. Sattinger, Indianapolis	Grape Smash	None.
27232	Indianapolis Bottling Co., Indianapolis	Strawberry Pop	None.
27233	Indianapolis Bottling Co., Indianapolis	Pop	None.
27234	Is Bottling Works, Indianapolis	Iron Brew	None.
27235	Is Bottling Works, Indianapolis	White Soda	None.
27237	Is Bottling Works, Indianapolis	Iron Brew	None.
27266	Merchants Soda Co., Indianapolis	Ginger Ale	None.
27267	Merchants Soda Co., Indianapolis	Pop	None.
27268	Merchants Soda Co., Indianapolis	Lemon Soda	None.
27269	Merchants Soda Co., Indianapolis	Lemon Sour	None.
27270	Merchants Soda Co., Indianapolis	Lemon Soda	None.
27271	Lee Yunker, Indianapolis	Cherry Cheer	None.
27275	Lee Yunker, Indianapolis	White Soda	None.
27276	Klee & Coleman, Indianapolis	White Soda	None.

## SUMMER DRINKS—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Brand.	Preservatives or Artificial Sweetener.
27277	Coco Cola Co., Indianapolis	Coro Cola	None.
27278	Imperial Bottling Works, Indianapolis	Grape Soda	None.
27279	Klee & Coleman, Indianapolis	Iron Brew	None.
27280	Klee & Coleman, Indianapolis	Strawberry Pop	None.
27281	Imperial Bottling Co., Indianapolis	Maltonia	None.
27283	Klee & Coleman, Indianapolis	Lemon Sour	None.
27284	Lee Yuncker, Indianapolis	Iron Brew	None.
27285	Lee Yuncker, Indianapolis	Grape Soda	None.
27286	Lee Yuncker, Indianapolis	Sarsaparilla	None.
27287	Lee Yuncker, Indianapolis	Chocolate Soda	None.
27288	Lee Yuncker, Indianapolis	Root Beer	None.
27377	Louisville Grocery Co., Louisville	Ginger Ale	None.
27312	W. H. Minch, Richmond	Sarsaparilla	None.
27351	Gardner Bros., Greencastle	Ginger Ale	None.
27353	Gardner Bros., Greencastle	Cream Soda	None.
27354	Gardner Bros., Greencastle	Strawberry Pop	None.
27355	Home Storage Mfg. Co., Elwood	Strawberry Pop	None.
27357	Gardner Bros., Greencastle	Sarsaparilla	None.
27358	Home Storage Mfg. Co., Elwood	Root Beer	None.
27359	Home Storage Mfg. Co., Elwood	Ginger Ale	None.
27360	Home Storage Mfg. Co., Elwood	Orange Soda	None.
27361	Home Storage Mfg. Co., Elwood	Chocolate Soda	None.
27362	Ertel Bottling Works, Tipton	Cream Soda	None.
27363	Elwood Bottling Works, Elwood	Chocolate Soda	None.
27364	Elwood Bottling Works, Elwood	Ginger Ale	None.
27365	Ertel Bottling Works, Tipton	Ginger Ale	None.
27367	Elwood Bottling Works, Elwood	Root Beer	None.
27368	Elwood Bottling Works, Elwood	Strawberry Soda	None.
27369	Elwood Bottling Works, Elwood	Cream Soda	None.
27370	Ertel Bottling Works, Tipton	Afri-Kola	None.
27371	Ertel Bottling Works, Tipton	Raspberry Soda	None.
27372	Ertel Bottling Works, Tipton	Strawberry Soda	None.
27373	Ertel Bottling Works, Tipton	Orange Soda	None.
27374	Taylor & Nicholson, New Castle	Strawberry Soda	None.
27375	W. H. Minch, Richmond	Strawberry Soda	None.
27378	W. H. Minch, Richmond	Cream Soda	None.
27390	Balling & Boyce, Richmond	Sarsaparilla	None.
27391	Balling & Boyce, Richmond	Strawberry Soda	None.
27392	Balling & Boyce, Richmond	Ginger Ale	None.
27397	Fosler Bottling Works, Richmond	Orange Soda	None.
27398	Taylor & Nicholson, New Castle	Wild Cherry Pop	None.
27399	Taylor & Nicholson, New Castle	Cream Soda	None.
27423	Home Bottling Works, Anderson	Strawberry Soda	None.
27424	Home Bottling Works, Anderson	Sarsaparilla	None.
27425	J. C. Kreutsch, Anderson	Cream Pop	None.
27426	J. C. Kreutsch, Anderson	Strawberry Soda	None.
27427	J. C. Kreutsch, Anderson	Iron Beer	None.
27428	Home Bottling Works, Anderson	Banana Pop	None.
27430	J. C. Kreutsch, Anderson	Lemon Sour	None.
27432	J. C. Kreutsch, Anderson	Ginger Ale	None.
27434	Home Bottling Works, Anderson	Lemon Soda	None.
27482	N. Fletcher, Frankfort	Pineapple Soda	None.
27493	N. Fletcher, Frankfort	Raspberry Soda	None.
27494	N. Fletcher, Frankfort	Cherry Phosphate	None.
27495	N. Fletcher, Frankfort	Ginger Ale	None.
27496	N. Fletcher, Frankfort	Chocolate Soda	None.
27497	N. Fletcher, Frankfort	Banana Soda	None.
27498	N. Fletcher, Frankfort	Ga-Ola	None.
27499	Lebanon Bottling Works, Lebanon	Root Beer	None.
27500	Lebanon Bottling Works, Lebanon	Cream Soda	None.
27501	Lebanon Bottling Works, Lebanon	Lemon Sour	None.
27502	W. S. Lane, French Lick	Sarsaparilla	None.
27509	W. S. Lane, French Lick	Strawberry Soda	None.
27510	Bedford Bottling Works, Bedford	Raspberry Soda	None.
27511	Bedford Bottling Works, Bedford	Orange Julep	None.
27512	N. Fletcher, Frankfort	Strawberry Soda	None.
27515	N. Fletcher, Frankfort	Grape Soda	None.
27517	N. Fletcher, Frankfort	Iron Brew	None.
27518	N. Fletcher, Frankfort	Cream Soda	None.
27519	N. Fletcher, Frankfort	Peach Soda	None.
27520	N. Fletcher, Frankfort	Blood Orange	None.
27522	N. Fletcher, Frankfort	Root Beer	None.
27523	Lebanon Bottling Works, Lebanon	Strawberry Soda	None.
27526	W. S. Lane, Lebanon	Blood Orange	None.
27529	Bedford Bottling Works, Bedford	Strawberry Soda	None.
27545	Vaughan & Casey, Crawfordsville	Orange Soda	None.



## SUMMER DRINKS—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Brand.	Preservatives or Artificial Sweetener.
27546	Vaughan & Casey, Crawfordsville.	Ginger Ale.	None.
27547	Vaughan & Casey, Crawfordsville.	Strawberry Soda.	None.
27548	Vaughan & Casey, Crawfordsville.	Concord Grape Pop.	None.
27549	Vaughan & Casey, Crawfordsville.	Cream Soda.	None.
27573	Indiana Harbor Beverage Co., Ind. Harbor.	Strawberry Soda.	None.
27574	Indiana Harbor Beverage Co., Ind. Harbor.	Root Beer.	None.
27575	Indiana Harbor Beverage Co., Ind. Harbor.	Pop.	None.
27576	Indiana Harbor Beverage Co., Ind. Harbor.	Grape Soda.	None.
27577	Indiana Harbor Beverage Co., Ind. Harbor.	Cream Soda.	None.
27579	Vaughan & Casey, Lafayette.	Ginger Ale.	None.
27580	Vaughan & Casey, Lafayette.	Strawberry Soda.	None.
27581	Vaughan & Casey, Lafayette.	Cherry Phosphate.	None.
27582	Vaughan & Casey, Lafayette.	Sarsaparilla.	None.
27583	C. E. Noll, Lafayette.	Ginger Ale.	None.
27587	C. E. Noll, Lafayette.	Cream Soda.	None.
27588	Vaughan & Casey, Lafayette.	Vin Fis.	None.
27589	Vaughan & Casey, Lafayette.	Orange Soda.	None.
27590	C. E. Noll, Lafayette.	Sarsaparilla.	None.
27591	C. E. Noll, Lafayette.	Blood Orange.	None.
27592	C. E. Noll, Lafayette.	Strawberry Soda.	None.
27593	H. W. Gagen, Lafayette.	Sarsaparilla.	None.
27595	Howell Bottling Works, Lafayette.	Strawberry Soda.	None.
27596	Howell Bottling Works, Lafayette.	Cream Soda.	None.
27597	Bohrer Bottling Works, Lafayette.	Raspberry Soda.	None.
27599	H. W. Gagen, Lafayette.	Ginger Ale.	None.
27600	H. W. Gagen, Lafayette.	Strawberry Soda.	None.
27601	Howell Bottling Works, Lafayette.	Root Beer.	None.
27604	Howell Bottling Works, Lafayette.	Ginger Ale.	None.
27605	Bohrer Bottling Works, Lafayette.	Cream Soda.	None.
27606	Bohrer Bottling Works, Lafayette.	Ginger Ale.	None.
27607	Bohrer Bottling Works, Lafayette.	Sarsaparilla.	None.
27609	M. W. Gagen, Lafayette.	Raspberry Soda.	None.
27610	H. W. Gagen, Lafayette.	Cream Soda.	None.
27634	Eagle Bottling Works, Marion.	Lemon Sour.	None.
27640	Eagle Bottling Works, Marion.	Blood Orange.	None.
27641	John Benedict, Marion.	Root Beer.	None.
27644	Wabash Bottling Works, Wabash.	Strawberry Soda.	None.
27661	P. D. Ferguson, Connersville.	Cream Soda.	None.
27662	Brecheisen Bottling Works, Rushville.	Strawberry Soda.	None.
27663	Brecheisen Bottling Works, Rushville.	Ginger Ale.	None.
27664	Brecheisen Bottling Works, Rushville.	Blood Orange.	None.
27666	J. Seidling, Brookville.	Chocolate Soda.	None.
27667	Brecheisen Bottling Works, Rushville.	Sarsaparilla.	None.
27672	Eagle Bottling Works, Monon.	Blood Orange.	None.
27673	Eagle Bottling Works, Monon.	Root Beer.	None.
27674	Eagle Bottling Works, Monon.	Ginger Ale.	None.
27676	Eagle Bottling Works, Monon.	Cream Soda.	None.
27678	J. T. Rademaker, Monon.	Strawberry Soda.	None.
27679	J. T. Rademaker, Monon.	Iron Brew.	None.
27681	Warren Bottling Works, Warren.	Ginger Ale.	None.
27683	Warren Bottling Works, Warren.	Root Beer.	None.
27685	Warren Bottling Works, Warren.	Blackberry Soda.	None.
27686	Warren Bottling Works, Warren.	Strawberry Soda.	None.
27700	Wabash Bottling Works, Wabash.	Orange Soda.	None.
27706	J. Seidling, Brookville.	Strawberry Soda.	None.
27707	J. Seidling, Brookville.	Orange Soda.	None.
27709	J. Seidling, Brookville.	Sarsaparilla.	None.
27710	J. Seidling, Brookville.	Ginger Ale.	None.
27711	P. D. Ferguson, Connersville.	Root Beer.	None.
27712	P. D. Ferguson, Connersville.	Ginger Ale.	None.
27715	P. D. Ferguson, Connersville.	Strawberry Soda.	None.
27717	Magic City Works, Muncie.	Root Beer.	None.
27718	Magic City Works, Muncie.	Ginger Ale.	None.
27719	City Bottling Works, Muncie.	Raspberry Soda.	None.
27720	City Bottling Works, Muncie.	Cream Soda.	None.
27721	City Bottling Works, Muncie.	Ginger Ale.	None.
27723	Magic City Works, Muncie.	Cream Soda.	None.
27724	Magic City Works, Muncie.	Strawberry Soda.	None.
27725	City Bottling Works, Muncie.	Birch Beer.	None.
27729	E. Abott, Hartford City.	Orange Soda.	None.
27730	E. Abott, Hartford City.	Lemon Soda.	None.
27731	Portland Bottling Works, Portland.	Cherry Phosphate.	None.
27732	E. Abott, Hartford City.	Orange Soda.	None.
27733	E. Abott, Hartford City.	Iron Beer.	None.
27734	E. Abott, Hartford City.	Strawberry Soda.	None.
27735	Portland Bottling Works, Portland.	Pineapple Soda.	None.

## SUMMER DRINKS—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Brand.	Preservatives or Artificial Sweetener.
27747	Coca Cola Co., Ft. Wayne	Strawberry Soda	None.
27764	Metager Bros., Flora	Pop	None.
27765	Metager Bros., Flora	Pop	None.
27766	Metager Bros., Flora	Pop	None.
27771	Union City Bottle Works, Union City	Cream Soda	None.
27772	Union City Bottle Works, Union City	Ginger Ale	None.
27773	Union City Bottle Works, Union City	Orangesade	None.
27774	Union City Bottle Works, Union City	Strawberry Soda	None.
27775	Portland Bottling Works, Portland	Ginger Ale	None.
27777	Portland Bottling Works, Portland	Cream Soda	None.
27780	City Bottling Works, Columbus	Strawberry Soda	None.
27783	City Bottling Works, Columbus	Cream Soda	None.
27784	City Bottling Works, Columbus	Cherry Soda	None.
27785	Seymour Bottling Works, Seymour	Ple Zee	None.
27786	Seymour Bottling Works, Seymour	Strawberry Soda	None.
27788	Seymour Bottling Works, Seymour	Cream Soda	None.
27789	Star Bottling Works, Seymour	Ginger Ale	None.
27790	Star Bottling Works, Seymour	Sarsaparilla	None.
27791	Star Bottling Works, Seymour	Cream Soda	None.
27792	Star Bottling Works, Seymour	Strawberry Soda	None.
27793	City Bottling Works, New Albany	Ginger Ale	None.
27794	City Bottling Works, New Albany	Cream Soda	None.
27795	City Bottling Works, New Albany	Sarsaparilla	None.
27796	City Bottling Works, New Albany	Strawberry Soda	None.
27797	City Bottling Works, New Albany	New York Coca	None.
27798	Joe Renn, New Albany	Root Beer	None.
27799	Joe Renn, New Albany	Jersey Cream	None.
27800	Joe Renn, New Albany	Cola	None.
27801	Joe Renn, New Albany	Ginger Ale	None.
27802	Joe Renn, New Albany	Strawberry Soda	None.
27804	Seymour Bottling Works, Seymour	Grape Soda	None.
27859	J. Downd, Altoona	Lemon Sour	None.
27860	R. E. Fullerton, Kendallville	Strawberry Soda	None.
27861	R. E. Fullerton, Kendallville	Orange Soda	None.
27862	R. E. Fullerton, Kendallville	Cherry Soda	None.
27863	R. E. Fullerton, Kendallville	Lemon Sour	None.
27864	A. Herberg, Huntington	Orange Soda	None.
27865	A. Herberg, Huntington	Strawberry Soda	None.
27866	A. Herberg, Huntington	Lemon Soda	None.
27867	Kolatsona Bottling Works, Huntington	Cola	None.
27868	Kolatsona Bottling Works, Huntington	Orange Soda	None.
27869	Kolatsona Bottling Works, Huntington	Cherry Soda	None.
27870	Kolatsona Bottling Works, Huntington	Kolatsona Soda	None.
27871	Kolatsona Bottling Works, Huntington	Strawberry Soda	None.
27872	Columbia City Bottling Wks., Columbia City	Sarsaparilla	None.
27873	Columbia City Bottling Wks., Columbia City	Strawberry Soda	None.
27874	Columbia City Bottling Wks., Columbia City	Ginger Ale	None.
27875	Columbia City Bottling Wks., Columbia City	Cream Soda	None.
27877	Columbia City Bottling Wks., Columbia City	Raspberry Soda	None.
27878	H. L. Conter, Decatur	Lemon Sour	None.
27879	M. L. Conter, Decatur	Strawberry Soda	None.
27890	M. L. Conter, Decatur	Ginger Ale	None.
27881	M. L. Conter, Decatur	Cream Soda	None.
27884	Lens Bros., Ft. Wayne	Birch Beer	None.
27885	Lens Bros., Ft. Wayne	Strawberry Soda	None.
27887	Lens Bros., Ft. Wayne	Ginger Ale	None.
27888	Lens Bros., Ft. Wayne	Cream Soda	None.
27889	Wm. Scheele, Ft. Wayne	Cream Soda	None.
27916	Wayne Mfg. Co., Ft. Wayne	Cream Soda	None.
27917	Wayne Mfg. Co., Ft. Wayne	Root Beer	None.
27918	Wayne Mfg. Co., Ft. Wayne	Sarsaparilla	None.
27920	Bluffton Bottling Works, Bluffton	Lemon Sour	None.
27921	Bluffton Bottling Works, Bluffton	Strawberry Soda	None.
27922	Bluffton Bottling Works, Bluffton	Root Beer	None.
27929	Metager Bros., Flora	Soft Drink Extract	None.
27946	Crystal Bottling Works, Ft. Wayne	Cream Soda	None.
27948	Coca Cola Company, Ft. Wayne	Lemon Sour	None.
27949	Coca Cola Company, Ft. Wayne	Lemon Soda	None.
27951	Wayne Mfg. Company, Ft. Wayne	Ginger Ale	None.
27952	Wayne Mfg. Company, Ft. Wayne	Strawberry Soda	None.
27974	Wm. Scheele, Ft. Wayne	Ginger Ale	None.
27975	Wm. Scheele, Ft. Wayne	Sarsaparilla	None.
27978	J. Freeman Co., Ft. Wayne	Cream Soda	None.
27979	J. Freeman Co., Ft. Wayne	Ginger Ale	None.
27980	J. Freeman Co., Ft. Wayne	Sarsaparilla	None.
27981	J. Freeman Co., Ft. Wayne	Strawberry Soda	None.

## SUMMER DRINKS—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Brand.	Preservatives or Artificial Sweetener.
27546	Vaughan & Casey, Crawfordsville	Ginger Ale	None.
27547	Vaughan & Casey, Crawfordsville	Strawberry Soda	None.
27548	Vaughan & Casey, Crawfordsville	Concord Grape Pop.	None.
27549	Vaughan & Casey, Crawfordsville	Cream Soda	None.
27572	Indiana Harbor Beverage Co., Ind. Harbor	Strawberry Soda	None.
27574	Indiana Harbor Beverage Co., Ind. Harbor	Root Beer	None.
27575	Indiana Harbor Beverage Co., Ind. Harbor	Pop.	None.
27576	Indiana Harbor Beverage Co., Ind. Harbor	Grape Soda	None.
27577	Indiana Harbor Beverage Co., Ind. Harbor	Cream Soda	None.
27579	Vaughan & Casey, Lafayette	Ginger Ale	None.
27580	Vaughan & Casey, Lafayette	Strawberry Soda	None.
27581	Vaughan & Casey, Lafayette	Cherry Phosphate	None.
27582	Vaughan & Casey, Lafayette	Sarsaparilla	None.
27583	C. E. Noll, Lafayette	Ginger Ale	None.
27587	C. E. Noll, Lafayette	Cream Soda	None.
27588	Vaughan & Casey, Lafayette	Vin Fla.	None.
27589	Vaughan & Casey, Lafayette	Orange Soda	None.
27590	C. E. Noll, Lafayette	Sarsaparilla	None.
27591	C. E. Noll, Lafayette	Blood Orange	None.
27592	C. E. Noll, Lafayette	Strawberry Soda	None.
27593	H. W. Gagen, Lafayette	Sarsaparilla	None.
27595	Howell Bottling Works, Lafayette	Strawberry Soda	None.
27596	Howell Bottling Works, Lafayette	Cream Soda	None.
27597	Bohrer Bottling Works, Lafayette	Raspberry Soda	None.
27599	H. W. Gagen, Lafayette	Ginger Ale	None.
27600	H. W. Gagen, Lafayette	Strawberry Soda	None.
27601	Howell Bottling Works, Lafayette	Root Beer	None.
27604	Howell Bottling Works, Lafayette	Ginger Ale	None.
27605	Bohrer Bottling Works, Lafayette	Cream Soda	None.
27606	Bohrer Bottling Works, Lafayette	Ginger Ale	None.
27607	Bohrer Bottling Works, Lafayette	Sarsaparilla	None.
27609	M. W. Gagen, Lafayette	Raspberry Soda	None.
27610	H. W. Gagen, Lafayette	Cream Soda	None.
27634	Eagle Bottling Works, Marion	Lemon Sour	None.
27640	Eagle Bottling Works, Marion	Blood Orange	None.
27641	John Benedict, Marion	Root Beer	None.
27644	Wabash Bottling Works, Wabash	Strawberry Soda	None.
27661	P. D. Ferguson, Connersville	Cream Soda	None.
27662	Brecheisen Bottling Works, Rushville	Strawberry Soda	None.
27663	Brecheisen Bottling Works, Rushville	Ginger Ale	None.
27664	Brecheisen Bottling Works, Rushville	Blood Orange	None.
27666	J. Seidling, Brookville	Chocolate Soda	None.
27667	Brecheisen Bottling Works, Rushville	Sarsaparilla	None.
27672	Eagle Bottling Works, Monon	Blood Orange	None.
27673	Eagle Bottling Works, Monon	Root Beer	None.
27674	Eagle Bottling Works, Monon	Ginger Ale	None.
27676	Eagle Bottling Works, Monon	Cream Soda	None.
27678	J. T. Rademaker, Monon	Strawberry Soda	None.
27679	J. T. Rademaker, Monon	Iron Brew	None.
27681	Warren Bottling Works, Warren	Ginger Ale	None.
27683	Warren Bottling Works, Warren	Root Beer	None.
27685	Warren Bottling Works, Warren	Blackberry Soda	None.
27686	Warren Bottling Works, Warren	Strawberry Soda	None.
27700	Wabash Bottling Works, Wabash	Orange Soda	None.
27706	J. Seidling, Brookville	Strawberry Soda	None.
27707	J. Seidling, Brookville	Orange Soda	None.
27709	J. Seidling, Brookville	Sarsaparilla	None.
27710	J. Seidling, Brookville	Ginger Ale	None.
27711	P. D. Ferguson, Connersville	Root Beer	None.
27712	P. D. Ferguson, Connersville	Ginger Ale	None.
27715	P. D. Ferguson, Connersville	Strawberry Soda	None.
27717	Magic City Works, Muncie	Root Beer	None.
27718	Magic City Works, Muncie	Ginger Ale	None.
27719	City Bottling Works, Muncie	Raspberry Soda	None.
27720	City Bottling Works, Muncie	Cream Soda	None.
27721	City Bottling Works, Muncie	Ginger Ale	None.
27723	Magic City Works, Muncie	Cream Soda	None.
27724	Magic City Works, Muncie	Strawberry Soda	None.
27725	City Bottling Works, Muncie	Birch Beer	None.
27729	E. Abott, Hartford City	Orange Soda	None.
27730	E. Abott, Hartford City	Lemon Soda	None.
27731	Portland Bottling Works, Portland	Cherry Phosphate	None.
27732	E. Abott, Hartford City	Orange Soda	None.
27733	E. Abott, Hartford City	Iron Beer	None.
27734	E. Abott, Hartford City	Strawberry Soda	None.
27735	Portland Bottling Works, Portland	Pineapple Soda	None.

## SUMMER DRINKS—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Brand.	Preservatives or Artificial Sweetener.
27747	Coca Cola Co., Ft. Wayne.	Strawberry Soda	None.
27764	Metsger Bros., Flora.	Pop.	None.
27765	Metsger Bros., Flora.	Pop.	None.
27766	Metsger Bros., Flora.	Pop.	None.
27771	Union City Bottle Works, Union City.	Cream Soda.	None.
27772	Union City Bottle Works, Union City.	Ginger Ale.	None.
27772	Union City Bottle Works, Union City.	Orangeade.	None.
27774	Union City Bottle Works, Union City.	Strawberry Soda.	None.
27775	Portland Bottling Works, Portland.	Ginger Ale.	None.
27777	Portland Bottling Works, Portland.	Cream Soda.	None.
27780	City Bottling Works, Columbus.	Strawberry Soda.	None.
27783	City Bottling Works, Columbus.	Cream Soda.	None.
27784	City Bottling Works, Columbus.	Cherry Soda.	None.
27785	Seymour Bottling Works, Seymour.	Ple Zee.	None.
27786	Seymour Bottling Works, Seymour.	Strawberry Soda.	None.
27788	Seymour Bottling Works, Seymour.	Cream Soda.	None.
27789	Star Bottling Works, Seymour.	Ginger Ale.	None.
27790	Star Bottling Works, Seymour.	Sarsaparilla.	None.
27791	Star Bottling Works, Seymour.	Cream Soda.	None.
27792	Star Bottling Works, Seymour.	Strawberry Soda.	None.
27793	City Bottling Works, New Albany.	Ginger Ale.	None.
27794	City Bottling Works, New Albany.	Cream Soda.	None.
27795	City Bottling Works, New Albany.	Sarsaparilla.	None.
27796	City Bottling Works, New Albany.	Strawberry Soda.	None.
27797	City Bottling Works, New Albany.	New York Coca.	None.
27798	Joe Renn, New Albany.	Root Beer.	None.
27799	Joe Renn, New Albany.	Jersey Cream.	None.
27800	Joe Renn, New Albany.	Cola.	None.
27801	Joe Renn, New Albany.	Ginger Ale.	None.
27802	Joe Renn, New Albany.	Strawberry Soda.	None.
27804	Seymour Bottling Works, Seymour.	Grape Soda.	None.
27859	J. Downd, Altoona.	Lemon Sour.	None.
27860	R. E. Fullerton, Kendallville.	Strawberry Soda.	None.
27861	R. E. Fullerton, Kendallville.	Orange Soda.	None.
27862	R. E. Fullerton, Kendallville.	Cherry Soda.	None.
27863	R. E. Fullerton, Kendallville.	Lemon Sour.	None.
27864	A. Herberg, Huntington.	Orange Soda.	None.
27865	A. Herberg, Huntington.	Strawberry Soda.	None.
27866	A. Herberg, Huntington.	Lemon Soda.	None.
27867	Kolatsna Bottling Works, Huntington.	Cola.	None.
27868	Kolatsna Bottling Works, Huntington.	Orange Soda.	None.
27869	Kolatsna Bottling Works, Huntington.	Cherry Soda.	None.
27870	Kolatsna Bottling Works, Huntington.	Kolatsna Soda.	None.
27871	Kolatsna Bottling Works, Huntington.	Strawberry Soda.	None.
27872	Columbia City Bottling Wks., Columbia City.	Sarsaparilla.	None.
27873	Columbia City Bottling Wks., Columbia City.	Strawberry Soda.	None.
27874	Columbia City Bottling Wks., Columbia City.	Ginger Ale.	None.
27875	Columbia City Bottling Wks., Columbia City.	Cream Soda.	None.
27877	Columbia City Bottling Wks., Columbia City.	Raspberry Soda.	None.
27878	H. L. Conter, Decatur.	Lemon Sour.	None.
27879	M. L. Conter, Decatur.	Strawberry Soda.	None.
27890	M. L. Conter, Decatur.	Ginger Ale.	None.
27881	M. L. Conter, Decatur.	Cream Soda.	None.
27884	Lens Bros., Ft. Wayne.	Birch Beer.	None.
27885	Lens Bros., Ft. Wayne.	Strawberry Soda.	None.
27887	Lens Bros., Ft. Wayne.	Ginger Ale.	None.
27888	Lens Bros., Ft. Wayne.	Cream Soda.	None.
27889	Wm. Scheele, Ft. Wayne.	Cream Soda.	None.
27916	Wayne Mfg. Co., Ft. Wayne.	Cream Soda.	None.
27917	Wayne Mfg. Co., Ft. Wayne.	Root Beer.	None.
27918	Wayne Mfg. Co., Ft. Wayne.	Sarsaparilla.	None.
27920	Bluffton Bottling Works, Bluffton.	Lemon Sour.	None.
27921	Bluffton Bottling Works, Bluffton.	Strawberry Soda.	None.
27922	Bluffton Bottling Works, Bluffton.	Root Beer.	None.
27929	Metsger Bros., Flora.	Soft Drink Extract.	None.
27946	Crystal Bottling Works, Ft. Wayne.	Cream Soda.	None.
27948	Coca Cola Company, Ft. Wayne.	Lemon Sour.	None.
27949	Coca Cola Company, Ft. Wayne.	Lemon Soda.	None.
27951	Wayne Mfg. Company, Ft. Wayne.	Ginger Ale.	None.
27952	Wayne Mfg. Company, Ft. Wayne.	Strawberry Soda.	None.
27974	Wm. Scheele, Ft. Wayne.	Ginger Ale.	None.
27975	Wm. Scheele, Ft. Wayne.	Sarsaparilla.	None.
27978	J. Freeman Co., Ft. Wayne.	Cream Soda.	None.
27979	J. Freeman Co., Ft. Wayne.	Ginger Ale.	None.
27980	J. Freeman Co., Ft. Wayne.	Sarsaparilla.	None.
27981	J. Freeman Co., Ft. Wayne.	Strawberry Soda.	None.

## SUMMER DRINKS—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Brand.	Preservatives or Artificial Sweetener.
27982	J. Freeman Co., Ft. Wayne.	Orange Soda.	None.
27983	Crystal Bottling Works, Ft. Wayne.	Strawberry Soda.	None.
27984	Crystal Bottling Works, Ft. Wayne.	None Such Cola.	None.
27985	Crystal Bottling Works, Ft. Wayne.	Sarsaparilla.	None.
27987	Crystal Bottling Works, Ft. Wayne.	Ginger Ale.	None.
27995	H. L. Conter, Decatur.	Root Beer.	None.
28110	J. Dowend, Altoona.	Root Beer.	None.
28 11	City Bottling Works, Auburn.	Cream Soda.	None.
28112	City Bottling Works, Auburn.	Blackberry Soda.	None.
28113	City Bottling Works, Auburn.	Ginger Ale.	None.
28114	City Bottling Works, Auburn.	Raspberry Soda.	None.
28115	City Bottling Works, Auburn.	Chocolate Soda.	None.
28117	City Bottling Works, Auburn.	Strawberry Soda.	None.
28248	White & Gillis, Clinton.	Grape Soda.	None.
28144	Clinton Bottling Works, Clinton.	Blood Orange.	None.
28148	Clinton Bottling Works, Clinton.	Lemon Soda.	None.
28150	B. Cassidy, W. Terre Haute.	Cola.	None.
28151	B. Cassidy, W. Terre Haute.	Lemon Sour.	None.
28152	Sullivan Bottling Works, Sullivan.	Cream Soda.	None.
28153	Sullivan Bottling Works, Sullivan.	Strawberry Soda.	None.
28154	Sullivan Bottling Works, Sullivan.	Ginger Ale.	None.
28157	Sullivan Bottling Works, Sullivan.	Strawberry Soda.	None.
28158	J. Hunter, Brasil.	Cream Soda.	None.
28160	J. Hunter, Brasil.	Orange Phosphate.	None.
28162	White & Gillis, Clinton.	Lemon Sour.	None.
28163	White & Gillis, Clinton.	Strawberry Soda.	None.
28165	C. Stork, Terre Haute.	Grape Soda.	None.
28166	C. Stork, Terre Haute.	Gen-to.	None.
28167	C. Stork, Terre Haute.	Pepsi-Cola.	None.
28168	C. Stork, Terre Haute.	Ginger Ale.	None.
28169	B. Cassidy, W. Terre Haute.	Strawberry Soda.	None.
28170	B. Cassidy, W. Terre Haute.	Pepsin Soda.	None.
28171	B. Cassidy, W. Terre Haute.	Strawberry Soda.	None.
28174	H. Becker, Terre Haute.	Lemon Soda.	None.
28175	H. Becker, Terre Haute.	Lemon Phosphate.	None.
28176	H. Becker, Terre Haute.	Pepsin Soda.	None.
28177	H. Becker, Terre Haute.	Grape Soda.	None.
28178	H. Becker, Terre Haute.	Pepsin Soda.	None.
28179	C. Stork, Terre Haute.	Pepsin Soda.	None.
28180	Byrd Bros., Terre Haute.	Root Beer.	None.
28181	Byrd Bros., Terre Haute.	Cream Soda.	None.
28182	Byrd Bros., Terre Haute.	Cola Coke.	None.
28183	M. Mohan, Terre Haute.	Grape Soda.	None.
28185	M. Mohan, Terre Haute.	Cream Soda.	None.
28186	M. Mohan, Terre Haute.	Ginger Ale.	None.
28187	Coca Cola Company, Terre Haute.	Strawberry Soda.	None.
28188	Coca Cola Company, Terre Haute.	Pepsin Soda.	None.
28189	Coca Cola Co., Terre Haute.	Sarsaparilla.	None.
28191	Coca Cola Co., Terre Haute.	Mint Cola.	None.
28192	T. & W. Gorey, Terre Haute.	Ginger Ale.	None.
28193	T. & W. Gorey, Terre Haute.	Pepsin Soda.	None.
28194	T. & W. Gorey, Terre Haute.	Grape Soda.	None.
28195	T. & W. Gorey, Terre Haute.	Lemon Sour.	None.
28196	T. & W. Gorey, Terre Haute.	Pepsin Soda.	None.
28197	Byrd Bros., Terre Haute.	Lemon Soda.	None.
28198	Byrd Bros., Terre Haute.	Strawberry Soda.	None.
28199	Byrd Bros., Terre Haute.	Vin Vigor.	None.
28200	Byrd Bros., Terre Haute.	Cream Soda.	None.
28222	Erbert Bros., Plymouth.	Strawberry Soda.	None.
28233	Progress Bottling Works, Rochester.	Root Beer.	None.
28204	Erbert Bros., Plymouth.	Iron Brew.	None.
28206	Erbert Bros., Plymouth.	Cherry Phosphate.	None.
28208	R. A. Van Dergriffe, Rochester.	Cream Soda.	None.
28209	Progress Bottling Works, Rochester.	Lemon Soda.	None.
28210	Progress Bottling Works, Rochester.	Ginger Ale.	None.
28211	Erbert Bros., Plymouth.	Vanilla Soda.	None.
28212	Erbert Bros., Plymouth.	Ginger Ale.	None.
28213	R. A. Vandergriffe, Rochester.	Strawberry Soda.	None.
28214	R. A. Vandergriffe, Rochester.	Chocolate Soda.	None.
28216	Progress Bottling Works, Rochester.	Root Beer.	None.
28217	Progress Bottling Works, Rochester.	Root Beer.	None.
28218	Kokomo Bottling Works, Kokomo.	Cream Soda.	None.
28219	R. A. Vandergriffe, Rochester.	Lemon Soda.	None.
28220	R. A. Vandergriffe, Rochester.	Chocolate Soda.	None.
28221	Kokomo Bottling Works, Kokomo.	Grape Soda.	None.
28223	J. F. Bergman, Kokomo.	Grape Soda.	None.

## SUMMER DRINKS—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Brand.	Preservatives or Artificial Sweetener.
28224	J. F. Bergman, Kokomo	Jersey Cream	None.
28225	H. L. Sharp, Delphi	Pineapple Soda	None.
28226	H. L. Sharp, Delphi	Sarsaparilla	None.
28228	Kokomo Bottling Works, Kokomo	Ginger Ale	None.
28229	Kokomo Bottling Works, Kokomo	Strawberry Soda	None.
28230	J. F. Bergman, Kokomo	Strawberry Soda	None.
28231	L. L. Hedrick, Warsaw	Cherry Cheer	None.
28232	J. F. Bergman, Kokomo	Raspberry Soda	None.
28233	J. F. Bergman, Kokomo	Lemon Sour	None.
28234	M. L. Sharp, Delphi	Strawberry Soda	None.
28235	J. F. Bergman, Kokomo	Blood Orange Soda	None.
28236	H. L. Sharp, Delphi	Blood Orange Soda	None.
28237	W. B. Enyart, Logansport	Daisy Special	None.
28238	W. B. Enyart, Logansport	Cream Soda	None.
28240	Wabash Bottling Works, Wabash	Root Beer	None.
28241	Wabash Bottling Works, Wabash	Strawberry Soda	None.
28242	Wabash Bottling Works, Wabash	Orange Soda	None.
28243	L. L. Rarick, Warsaw	Strawberry Soda	None.
28245	W. B. Enyart, Logansport	Strawberry Soda	None.
28250	Wabash Bottling Works, Wabash	Ginger Ale	None.
28251	Wabash Bottling Works, Wabash	Birch Beer	None.
28252	Wabash Bottling Works, Wabash	Cream Soda	None.
28253	L. L. Rarick, Warsaw	Root Beer	None.
28254	L. L. Rarick, Warsaw	Cream Soda	None.
28256	Moder & Kreutzer, Peru	Raspberry Soda	None.
28257	Moder & Kreutzer, Peru	Strawberry Soda	None.
28259	H. L. Sharp, Delphi	Cream Soda	None.
28260	W. B. Enyart, Logansport	Ginger Ale	None.
28261	W. B. Enyart, Logansport	Sarsaparilla	None.
28262	J. Collins, Warsaw	Cherry Phosphate	None.
28263	Moder & Kreutzer, Peru	Ginger Ale	None.
28265	J. Collins, Warsaw	Root Beer	None.
28266	J. Collins, Warsaw	Orange Soda	None.
28269	L. L. Rarick, Warsaw	Ginger Ale	None.
28270	J. Collins, Warsaw	Lemon Soda	None.
28271	J. Collins, Warsaw	Cream Soda	None.
28272	George Lamberson, Laporte	Strawberry Soda	None.
28273	T. & W. Gorey, Terre Haute	Strawberry Soda	None.
28274	George Lamberson, Laporte	Grape Pop	None.
28275	George Lamberson, Laporte	Sarsaparilla	None.
28278	George Lamberson, Laporte	Wild Cherry	None.
28301	Mr. O'Conner, Greensburg	Cherry Cheer	None.
28302	Mr. O'Conner, Greensburg	Orange Soda	None.
28303	Mr. O'Conner, Greensburg	Sarsaparilla	None.
28305	Mr. O'Conner, Greensburg	Ginger Ale	None.
28312	Eder Bros., North Vernon	Root Beer	None.
28313	Eder Bros., North Vernon	Strawberry Soda	None.
28315	Eder Bros., North Vernon	Ginger Ale	None.
28316	Eder Bros., North Vernon	Sarsaparilla	None.
28829	Klee & Coleman, Indianapolis	Cream Soda	None.
28830	Recker Bottling Works, Vincennes	Cherry Phosphate	None.
28831	Recker Bottling Works, Vincennes	Cream Soda	None.
28832	Recker Bottling Works, Vincennes	Strawberry Soda	None.
28833	Recker Bottling Works, Vincennes	Blood Orange	None.
28834	F. A. Thuis, Vincennes	Cherry Soda	None.
28835	F. A. Thuis, Vincennes	Strawberry Soda	None.
28836	F. A. Thuis, Vincennes	Cream Soda	None.
28837	F. A. Thuis, Vincennes	Blood Orange	None.
28838	Star Bottling Works, Vincennes	Strawberry Soda	None.
28839	Star Bottling Works, Vincennes	Blood Orange	None.
28840	Star Bottling Works, Vincennes	Cream Soda	None.
28841	Star Bottling Works, Vincennes	Grape Soda	None.
28842	Washington Bottling Works, Washington	Lemon Soda	None.
28843	Washington Bottling Works, Washington	Strawberry Soda	None.
28844	Washington Bottling Works, Washington	Cream Soda	None.
28845	Washington Bottling Works, Washington	Cherry Cheer	None.
28847	Petersburg Bottling Works, Petersburg	Sarsaparilla	None.
28848	Petersburg Bottling Works, Petersburg	Peach Soda	None.
28849	Petersburg Bottling Works, Petersburg	Strawberry Soda	None.
28863	B. C. Corbin, Union City	Grape Juice	None.
28865	A. Herberg, Huntington	Sarsaparilla	None.
28866	Eagle Bottling Works, Monon	Sarsaparilla	None.
28880	Lake County Bottling Works, E. Chicago	Ginger Ale	None.
28884	Independent Bottling Works, Evansville	Raspberry Soda	None.
28885	Independent Bottling Works, Evansville	Cream Soda	None.
28886	Independent Bottling Works, Evansville	Lemon Sour	None.

## SUMMER DRINKS—LEGAL—Continued.

Labo- ratory No.	Manufacturer or Retailer.	Brand.	Preservatives or Artificial Sweetener.
28888	J. Forthofer, Mt. Vernon.	Orange Phosphate	None.
28889	J. Forthofer, Mt. Vernon.	Cherry Soda	None.
28890	J. Forthofer, Mt. Vernon.	Cream Soda	None.
28891	J. Forthofer, Mt. Vernon.	Crown Brew	None.
28892	J. Forthofer, Mt. Vernon.	Root Beer	None.
28893	J. Forthofer, Mt. Vernon.	Strawberry Soda	None.
28899	Petersburg Bottling Works, Petersburg.	Chocolate Soda	None.
28900	J. Vogel, Evansville.	Bludwine	None.
28901	J. Vogel, Evansville.	Lemon Sour	None.
28902	J. Vogel, Evansville.	Sinalco	None.
28903	J. Vogel, Evansville.	Cream Soda	None.
28904	J. Vogel, Evansville.	Sarsaparilla	None.
28905	J. Vogel, Evansville.	Strawberry Soda	None.
28906	Home Bottling Works, Evansville.	Strawberry Soda	None.
28907	Home Bottling Works, Evansville.	Sarsaparilla	None.
28908	Home Bottling Works, Evansville.	Lemon Sour	None.
28909	Home Bottling Works, Evansville.	Orange Ade	None.
28910	Chero-Cola Bottling Works, Evansville.	Ginger Ale	None.
28911	Chero-Cola Bottling Works, Evansville.	Lemon Sour	None.
28913	Chero-Cola Bottling Works, Evansville.	Sarsaparilla	None.
28914	Chero-Cola Bottling Works, Evansville.	Strawberry Soda	None.
28915	Chero-Cola Bottling Works, Evansville.	Cream Soda	None.
28916	Mt. Valley Bottling Works, Evansville.	Strawberry Soda	None.
28917	Mt. Valley Bottling Works, Evansville.	Cola Queen	None.
28918	Mt. Valley Bottling Works, Evansville.	Sarsaparilla	None.
28919	Mt. Valley Bottling Works, Evansville.	Strawberry Soda	None.
28920	Mt. Valley Bottling Works, Evansville.	Cream Soda	None.
28921	Lake County Bottling Works, E. Chicago.	Strawberry Soda	None.
28922	Lake County Bottling Works, E. Chicago.	Iron Soda	None.
28923	Lake County Bottling Works, E. Chicago.	Raspberry Soda	None.
28924	Sanitary Bottling Works, Indiana Harbor.	Root Beer	None.
28925	Sanitary Bottling Works, Indiana Harbor.	Kola Kola	None.
28926	Sanitary Bottling Works, Indiana Harbor.	Lemon Soda	None.
28927	Morris Bottling Works, Gary.	Iron Brew	None.
28928	Morris Bottling Works, Gary.	Cola	None.
28929	Morris Bottling Works, Gary.	Strawberry Soda	None.
28930	Weber & Crouch, Gary.	Cream Soda	None.
28931	Weber & Crouch, Gary.	Vin Fla	None.
28932	Weber & Crouch, Gary.	Ginger Ale	None.
28933	Weber & Crouch, Gary.	Orange Soda	None.
28934	H. C. Kunkel, Michigan City.	Sarsaparilla	None.
28935	H. C. Kunkel, Michigan City.	Strawberry Soda	None.
28937	Standard Bottling Works, Michigan City.	Ginger Ale	None.
28938	Standard Bottling Works, Michigan City.	Strawberry Soda	None.
28943	W. Helt, Laporte.	Orange Soda	None.
28944	W. Helt, Laporte.	Strawberry Soda	None.
28945	W. Helt, Laporte.	Raspberry Soda	None.
28949	H. Berlin, South Bend.	Strawberry Soda	None.
28950	H. Berlin, South Bend.	Beerine	None.
28952	Coca Cola Co., South Bend.	Raspberry Soda	None.
28953	Coca Cola Co., South Bend.	Strawberry Soda	None.
28954	Coca Cola Co., South Bend.	Orange Phosphate	None.
28955	Elkhart City Bottling Works, Elkhart.	Strawberry Soda	None.
28956	Elkhart City Bottling Works, Elkhart.	Root Beer	None.
28957	Elkhart City Bottling Works, Elkhart.	Sarsaparilla	None.
28958	Goshen Bottling Works, Goshen.	Strawberry Soda	None.
28959	Goshen Bottling Works, Goshen.	Blood Orange	None.
28960	Goshen Bottling Works, Goshen.	Root Beer	None.
28961	Lee Yunker, Indianapolis.	Lemon Sour	None.
28965	Star Bottling Works, Vincennes.	Cream Soda	None.
28766	Star Bottling Works, Vincennes.	Grape Soda	None.

## SUMMER DRINKS—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Brand.	Preservatives.		
			Saccharin.	Benzoic Acid.	Salicylic Acid.
27025	Carmichael & Severns, Kokomo.....	Orange Soda.....	None....	None....	None. Misbranded.
27145	Sanitary Bottling Wks., Indiana Harbor...	Iron Force.....	Present...	Present...	
27146	Sanitary Bottling Wks., Indiana Harbor...	Ginger Ale.....	Present...	Present...	
27147	Sanitary Bottling Wks., Indiana Harbor...	Root Beer.....	Present...	Present...	
27151	Sanitary Bottling Wks., Indiana Harbor...	Root Beer.....	Present...	Present...	
27153	Northern Indiana Bottling Wks., Indiana Harbor...	Soda Pop.....	Present...		
27154	Sanitary Bottling Wks., Indiana Harbor...	Soda Pop.....	None....		
27172	Sanitary Bottling Wks., Indiana Harbor...	Pop.....	Present...	Present...	
27194	L. Rehme, Shelbyville.....	Soda Water.....	Present...	None....	
27195	L. Rehme, Shelbyville.....	Soda Water.....	Present...	Present...	
27199	L. Rehme, Shelbyville.....	Soda Water.....	Present...	None....	Misbranded.
27229	Indianapolis Bottling Co., Indianapolis...	Sarsaparilla.....	None....	None....	Misbranded.
27236	Is Bottling Co., Indianapolis.....	Iron Brew.....	None....	None....	None. Misbranded.
27350	Ertel Bottling Works, Tipton.....	Sarsaparilla.....	None....	None....	Misbranded.
27383	Foster Bottling Works, Richmond.....	Cream Soda.....	None....	None....	Present.
27384	Foster Bottling Works, Richmond.....	Strawberry Soda.....	None....	None....	Present.
27385	Foster Bottling Works, Richmond.....	Ginger Ale.....	None....	None....	Present.
27386	Foster Bottling Works, Richmond.....	Sarsaparilla.....	None....	None....	Present.
27594	Howell Bottling Works, Lafayette.....	Blood Orange.....	None....	Present...	None.
27671	Foster Bottling Works, Richmond.....	Orange Soda.....	None....	None....	Present.
27677	J. T. Rademaker, Monon.....	Cream Soda.....	None....	None....	None. Misbranded.
27687	Foster Bottling Works, Richmond.....	Ginger Ale.....	None....	None....	Present.
27701	Cruce-Shoover, Sweetser.....	Blackberry Soda.....	None....	Present...	None.
27905	Wm. Scheele, Ft. Wayne.....	Root Beer.....	None....	None....	Present.
27919	Bluffton Bottling Works, Bluffton.....	Grape Soda.....	None....	Present...	None.
28142	Clinton Bottling Works, Clinton.....	Cream Soda.....	Present...	None....	None.
28145	Clinton Bottling Works, Clinton.....	Iron Brew.....	Present...	None....	None.
28147	Clinton Bottling Works, Clinton.....	Lemon Sour.....	Present...	None....	None.
28184	H. Mohan, Terre Haute.....	Lemon Sour.....	Present...	None....	None.
28222	Kokomo Bottling Works, Kokomo.....	Raspberry Soda.....	None....	Present...	None.
28226	Kokomo Bottling Works, Kokomo.....	Raspberry Soda.....	None....	Present...	None.
28227	Kokomo Bottling Works, Kokomo.....	Orange Soda.....	None....	Present...	None.
28277	George Lamberson, Laporte.....	Root Beer.....	None....	None....	Present.
28279	Sanitary Bottling Works, Indiana Harbor...	Iron Force.....	Present...	Present...	None.
28280	Sanitary Bottling Works, Indiana Harbor...	Root Beer.....	Present...	Present...	None.
28281	Sanitary Bottling Works, Indiana Harbor...	Sarsaparilla.....	Present...	Present...	None.
28282	Sanitary Bottling Works, Indiana Harbor...	Strawberry Pop.....	Present...	Present...	None.
28837	City Bottling Works, Indianapolis.....	Orange Soda.....	None....	None....	None. Not labeled.
28828	City Bottling Works, Indianapolis.....	Lemon Sour.....	None....	None....	None.
28867	George Lamberson, Laporte.....	Soda.....	Present...	None....	None.
28877	Warren Bottling Works, Warren.....	Hop Ale.....	None....	Present...	None.
28878	Independent Bottling Works, Evansville...	Cherry Soda.....	None....	Present...	None.
28879	Clinton Bottling Works, Clinton.....	Strawberry Soda.....	Present...	Present...	None.
28881	Sanitary Bottling Works, Indiana Harbor...	Strawberry Soda.....	None....	None....	None. Not labeled.
28936	H. C. Kunkel, Michigan City.....	Orange Soda.....	Present...	Present...	
28940	George Lamberson, Laporte.....	Strawberry Soda.....	Present...	None....	
28941	George Lamberson, Laporte.....	Ginger Ale.....	Present...	None....	
28942	George Lamberson, Laporte.....	Root Beer.....	Present...	Present...	
28946	W. Griesinger, South Bend.....	Strawberry Soda.....	Present...	None....	
28947	W. Griesinger, South Bend.....	Ginger Ale.....	Present...	None....	

## BAKING POWDER.

Nine samples of baking powder were analyzed during the year. Of this number three samples, all submitted for analysis, showed an available carbon dioxide content slightly below our required standard of 10 per cent. Indiana makes no distinction between various types of baking powders nor do our laws require alum or phosphate or cream of tartar baking powders to be so labeled.



## BAKING POWDER.

Laboratory No.	Manufacturer or Retailer.	Available Carbon Dioxide.	Remarks.
22637	Swaysee Market, Marion.....	12.41	Legal.
22723	T. H. Burkhart, Carmel.....	12.41	Legal.
23822	J. A. Coolman, Geneva.....	11.85	Legal.
23824	G. W. Cooper, Geneva.....	16.82	Legal.
26769	Alexander Grovery Co., Fairland.....	12.35	Legal.
26771	J. J. Mull, Adams.....	9.65	Slightly below standard. Illegal.
27062	Silver Leaf Baking Powder Co., Shelbyville.....	9.56	Illegal.
27063	Silver Leaf Baking Powder Co., Shelbyville.....	9.79	Illegal.
27116	Silver Leaf Baking Powder Co., Shelbyville.....	12.61	Legal.

## CIDER VINEGAR.

Of the 81 cider vinegars analyzed 21 were classed as legal and 60 illegal. Nearly all of the vinegar samples analyzed were sent into the laboratory by interested producers or purchasers and the results tabulated must not be assumed to represent the quality of the vinegars sold on our markets. Illegal vinegars are usually so classed because of a low acid content, although in some cases the solid content is also below standard. As in other years, we have to call attention to the fact that the vinegar produced at the farm is evidently made under conditions which will not admit of proper alcoholic and subsequent acetous fermentation. Many of the vinegars submitted by producers have been made under such conditions that the alcohol content was evidently destroyed or lost before the acetous fermentation was completed. In such cases the vinegars never will make a legal product. Other samples are but partially fermented and the alcohol content is so high that proper handling will eventually produce a legal vinegar.

Too much stress cannot be laid upon the fact that it is unwise for the farmer to sell his vinegar and for the merchant to buy it until a careful analysis has determined the fact that it meets the standards of the State as to its acid and apple solid content.

A set of 14 samples of suspected cider vinegar was sent in by one of the inspectors for analysis. The chemical factors usually relied upon showed the vinegars to be legal with the exception of three. Some special work was done on this set of vinegars along the line worked out by S. L. Crawford\* to determine whether they were real cider vinegars or not. Pure cider vinegar, according to Crawford, contains an average of 0.162 gm. of a volatile reducing substance per 100 cc. This factor was determined on some known cider vinegars along with those suspected and was found to con-

\*Journal of Industrial and Engineering Chemistry, Vol. 5, page 845.

form very closely with that given by Crawford. If this factor can be relied upon it will give a valuable means for detecting a large number of "fake" or "made" vinegars now on the market.

The following table gives the results obtained on the samples:

Laboratory Number.	Acidity.	Total Solids.	Ash.	Alkalinity of Ash.	Polarization.	Caramel.	Sugars Before Inversion.	Lead Acetate Precipitate.	Non-Sugar Solids.	Ratio of Ash to Non-Sugars.	Sugar in Solids.	Volatile Reducing Substance Per 100cc.
7107G	4.13°C	1.51%	0.40%	38.0cc. n/10 HCl.	-1.0	—	0.89%	Good.	0.82%	1:2.8	45.7%	.234 gm.
7108G	3.06°C	1.47%	0.31%	21.0cc. n/10 HCl.	± .0	—	0.61%	Good.	0.86%	1:3.7	41.5%	.132 gm.
7124G	4.09%	2.27%	0.32%	32.0cc. n/10 HCl.	— .4	—	1.95%	Good.	0.32%	1:1.77	85.9%	.193 gm.
7128G	4.33%	1.65%	0.38%	26.0cc. n/10 HCl.	— .4	—	1.01%	Good.	0.64%	1:2.37	61.2%	.139 gm.
7130G	4.28%	1.88%	0.35%	26.0cc. n/10 HCl.	± .0	—	1.16%	Good.	0.72%	1:4	61.7%	.118 gm.
7131G	6.07%	1.60%	0.37%	32.0cc. n/10 HCl.	+ .8	—	1.14%	Good.	0.46%	1:1.9	71.2%	.123 gm.
7133G	4.18%	2.64%	0.44%	26.0cc. n/10 HCl.	-1.8	—	1.72%	Good.	0.99%	1:6.1	65.1%	.167 gm.
7151G	3.97%	1.67%	0.20%	19.0cc. n/10 HCl.	— .4	—	0.56%	.....	1.11%	1:5.5	33.0%	.101 gm.
7152G	4.11%	1.71%	0.25%	23.0cc. n/10 HCl.	+1.0	—	0.42%	.....	1.29%	1:5	24.5%	.014 gm.
7155G	4.23%	1.20%	0.28%	22.0cc. n/10 HCl.	± .0	—	0.46%	.....	0.74%	1:2.6	38.3%	.129 gm.
7158G	2.52%	0.81%	0.21%	22.0cc. n/10 HCl.	± .0	—	0.20%	.....	0.61%	1:3	24.6%	.052 gm.
7168G	3.77%	0.71%	0.12%	10.0cc. n/10 HCl.	+1.0	Present	0.18%	.....	0.53%	1:4.3	25.0%	Trace.
7169G	4.25%	2.08%	0.29%	28.0cc. n/10 HCl.	± .0	—	0.57%	.....	1.51%	1:5.2	27.4%	.032 gm.
7171G	4.08%	1.96%	0.25%	20.0cc. n/10 HCl.	± .0	—	0.52%	.....	1.44%	1:5.7	27.0%	.056 gm.

## CIDER VINEGARS—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Acidity.	Solids.	Ash.	Alkalinity of Ash.	Color.	Lead Acetate Precipitate.	Polarization
25977	Hulman & Co.	Terre Haute.	4.25	1.67	23	21.0	Normal		.....
26379	Chas. A. Huffman.	St. Wayne.	4.17	1.78	20	13.0			.....
26387	John Howard.	Knightstown.	4.11	2.13	25	12.0			.....
26563	M. G. White.	Dan.	4.97	1.75	30	10.0			.....
26571	Augustine Bros.	Westville.	4.05	2.88	32	10.0			.....
26579	Sent in from.	Seymour.	4.27	2.75	32	10.0			.....
26620	Sent in from.	Indianapolis.	4.93	1.92	20	8.0			.....
26817	J. F. Quigley.	Noblesville.	5.7	1.98	26	22.0			.....
26825	C. M. Corbin.	Indianapolis.	4.01	1.64	31	9.0			.....
26894	O. Steebman.	Lawrenceburg.	4.96	2.07	30	34.0			.....
26900	Audell Grocery Co.	Aurora.	4.4	2.87	47	52.0			.....
26902	J. McGinnahan.	Lawrenceburg.	6.38	1.78	33	28.0			.....
26972	Old Vincennes Preserving Co.	Vincennes.	4.31	2.39	36	30.0			.....
26994	L. King.	Indianapolis.	4.01	1.87	27	20.0			.....
27357	A. W. Carr Co.	Marion.	5.28	2.09	36	46.0	Normal	Heavy	.....
27758	Roy B. Smith.	Tipton.	4.05	2.24	22	24.0	Normal	Heavy	.....
27814	Evansville Grocery Supply.	Evansville.	4.30	1.95	27	28.0	Bleached.	Heavy	.....
27883	Samuel H. Michel.	Tipton.	5.27						.....
27904	B. F. Moore.	Columbus.	4.04	2.20	36	32.0	Normal	Light	.....
27958	A. W. Carr Co.	Marion.	5.17	2.24	35	36.0	Normal	Heavy	.....
28125	J. Smith.	Plainfield.	3.55	2.41	40	40.0	Normal	Heavy	.....

## CIDER VINEGAR—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Acidity.	Solids.	Ash.	Alkalinity of Ash.	Color.	Lead Acetate Precipitate.	Polarization.	Remarks.
26978	Hulman & Co.	Terre Haute.	2.59	1.80	.25	24.0	Normal		- 2	Low in acidity.
26943	Sent in from.	Laporte.	3.86	1.08	.82	18.0	Normal		+ 0	Low in acidity and solids.
26944	Sent in from.	Laporte.	3.88	1.13	.98	18.0	Normal		+ 0	Low in acidity and solids.
26945	Sent in from.	Laporte.	3.08	1.84	.78	27.0	Normal		+ 0	Low in acidity.
26328	Huntington Grocery Co	Huntington.	3.11	3.4	.71	7.0			+ 1.6	Low in acidity.
26383	William Corran.	Union City.	3.41	1.56	.16	8.0			- .8	Low in acidity and alkalinity of ash.
26564	George H. Smith	Portland	2.28	.65	.18	5.0			+ 0	Low in acidity.
26565	George H. Smith	Portland	2.29	.67	.19	7.0			- .4	Low in acidity.
26566	George H. Smith	Portland	2.23	.64	.18	6.0			- .2	Low in acidity.
26618	J. C. Kerr.	Cincinnati, O.	3.43	1.72	.22	9.0			+ 6	Not a legal cider vinegar.
26830	C. O. Davis.	Dublin.	5.53	.73	.29	6.0			- 1.2	Not a legal cider vinegar.
26831	C. O. Davis.	Dublin.	5.35	.69	.26	7.0			+ 1.8	Low in solids.
26832	C. O. Davis.	Dublin.	5.59	.88	.26	7.0			+ 2.4	Low in solids.
26833	C. O. Davis.	Dublin.	3.9	.82	.32	10.0			+ .8	Low in acidity.
26834	C. O. Davis.	Dublin.	3.47	.81	.26	4.0			+ .8	Low in acidity.
26831	Alex. Punsley	Hartford City.	2.93	1.63	.20	27.0			- .8	Low in acidity, solids and ash.
26892	Grocery Supply Co.	Cincinnati, O.	3.81	1.01	.12	4.0			- .8	Low in acidity, ash and alkalinity.
26898	J. Bebrander.	Aurora.	3.5	2.22	.13	4.0			+ 0	Low in solids.
26936	Sent in from.	Laporte.	4.6	1.17	.31	34.0			+ 0	Low in solids.
26937	Sent in from.	Laporte.	4.48	1.08	.27	22.0			+ 0	Low in solids.
26947	J. W. Leazenby	Plymouth.	3.62	1.43	.30	30.0			- 4	Not legal nor will it make one.
26982	L. King	Indianapolis.	3.88	2.39	.30	18.0			+ 0	Low in acidity.
26983	L. King	Indianapolis.	3.96	1.73	.27	17.0			+ 0	Slightly low in acidity.
26994	C. M. Corlin	Noblesville.	3.36	2.38	.37	30.0			+ 0	Low in acidity.
26997	Boyd Grandstaff	Laporte.	4.85	1.20	.39	2.0			+ 0	Low in solids and alkalinity.
27017	Boyd Grandstaff	Laporte.	4.45	1.15	.33	14.0			+ 0	Low in acidity.
27081	Sent in from.	Indianapolis.	3.94		.88				+ 0	Not a vinegar, but a cider.
27072	A. J. Gubser	Tanger.	3.19	1.38	.68	56.0			+ 0	Low in acidity.
27116	A. J. Gubser	Linton.	3.19	7.7	.019	2.0			+ 0	Low in acidity, ash and alkalinity.
27163	S. G. Eagle	Cory.	1.94	.75	.30	34.0	Normal		+ 0	Not a legal cider vinegar.
27689	J. B. McKinney	Indian Springs	2.7	2.83	.15	10.0	Normal	Heavy	- 4	Low in acidity.
27759	Roy B. Smith	Tipton.	3.17	2.68	.27	26.0	Normal	Heavy	+ 0	Low in acidity.
27760	Roy B. Smith	Tipton.	3.44	.91	.30	30.0	Normal	Heavy	+ 0	Low in solids.

27761	Roy B. Smith	Tipton	4.37	1.10	.25	22.0	Normal	Heavy	— 2	Low in solids.
27762	Roy B. Smith	Tipton	5.51	1.41	.28	26.0	Normal	Heavy	— 2	Low in solids.
27763	Roy B. Smith	Tipton	5.16	.94	.068	6.0		Light	= 4.6	Not a legal cider vinegar.
27812	Baumer & Son	Princeton	4.98	1.50						Not a cider vinegar.
27813	Hill L. Purdy	Princeton	3.86	1.91						Low in acidity.
27816	C. E. Morsman	Princeton	4.34	.29						Not a cider vinegar.
27890	Samuel H. Michel	Tipton	4.61	1.70	.037	38.0	Normal	Medium	= 0	Not a legal vinegar.
27891	Samuel H. Michel	Tipton	2.42	1.76	.305	32.0		Heavy	= 1.0	Low in acidity.
27892	Samuel H. Michel	Tipton	3.85		.045	18.0		Light	= 1.6	Not a cider vinegar.
27893	Samuel H. Michel	Tipton	1.44		.19	30.0	Normal	Heavy	= 0	Low in acid.
27895	Samuel H. Michel	Tipton	2.97		.33					Low in acidity.
27896	Samuel H. Michel	Tipton	2.27							Low in acidity.
27897	Samuel H. Michel	Tipton	3.17							Low in acidity.
27898	Samuel H. Michel	Tipton	3.17							Low in acidity.
27899	Samuel H. Michel	Tipton	2.30							Low in acidity.
27900	Samuel H. Michel	Tipton	3.72							Low in acidity.
27901	Samuel H. Michel	Tipton	3.97							Low in acidity.
27902	Samuel H. Michel	Tipton	1.64							Low in acidity.
27903	Samuel H. Michel	Tipton	1.58							Low in acidity.
28124	Sam Guber	Tipton	2.11	1.75	.41	48.0			= 0	Not completely fermented.
28128	Scott & Iron	Indianapolis	3.98	5.06	.31	26.0	Normal	Medium	= 0	Low in acidity.
28351	W. S. Turrell	Medora	2.92	1.75	.35	30.0	Normal	Heavy	= 2.0	Not a legal vinegar.
28352	W. S. Turrell	Medora	1.6	5.53	.28	30.0	Normal	Light	= 0	Low in acidity.
28360	Clarence Langston	Dublin	1.51	1.11	.23	20.0	Normal	Very little	— 1.0	Low in acidity.
28361	B. C. Corbin	Union City	3.04	1.54	.23	20.0	Normal	None	= 0	Low in acidity.
28362	B. C. Corbin	Union City	3.22	1.08						

## JELLIES AND JAMS.

Forty-two jellies and jams were analyzed during the year of which 17 were classed as pure and 25 adulterated. Twenty-one of the 25 adulterated samples were improperly branded; three contained benzoate of soda in violation of the Indiana law and one sample contained saccharin.

## JELLIES AND JAMS—LEGAL.

Laboratory No.	Kind.	Manufacturer.	Coloring.	Preservatives.
27021	Fig Jelly	Roy Johnson, Logansport	None	None.
27224	Jelly	John Zwiesler, Richmond	None	None.
27238	Jelly	Chapman & Smith, Chicago	None	None.
27241	Jelly	Chapman & Smith, Chicago	None	None.
27248	Jelly	E. A. Kleiber, Winchester	None	None.
27250	Jelly	William Spain, Bluffton	None	None.
27254	Jelly	Chapman & Smith, Chicago	None	None.
27255	Jelly	Peter Husson, Richmond	None	None.
27260	Jelly	Deserick-Berry Co., Chicago	None	None.
27264	Jelly	L. Schnepf, Indianapolis	None	None.
27265	Jelly	Century Biscuit Co., Indianapolis	None	None.
27308	Jelly	Bert Schreiber, Indianapolis	None	None.
27418	Strawberry Jam	Sulsberger Co., Richmond	None	None.
28014	Jelly	L. W. Keplogel, Muncie	None	None.
28016	Jelly	C. E. Hinkley, Muncie	None	None.
28018	Jelly	Taggart Baking Co., Indianapolis	None	None.
28020	Jelly	Sponsels Bakery, Indianapolis	None	None.

## JELLIES AND JAMS—ILLEGAL.

Laboratory No.	Kind.	Manufacturer.	Coloring.	Preservatives.
27219	Jelly	F. M. Besty, Montpelier	Artificial	None.
27220	Jelly	Bessire & Co., Indianapolis	Artificial	None.
27221	Jelly	Jacob Murphy, Montpelier	Artificial	None.
27223	Jelly	Corn Product Refining Co., New York	Artificial	None.
27223	Apple Jelly	Corn Product Refining Co., New York	Artificial	None.
27226	Jelly	Bessire & Co., Indianapolis	Artificial	None.
27239	Jelly	F. E. Schulz, Warren	None	Benzoate.
27243	Jelly	Corn Product Refining Co., New York	Artificial	None.
27244	Jelly	Clyde Hiatt, Winchester	Artificial	None.
27245	Jelly	Chapman & Smith, Chicago	Artificial	None.
27249	Jelly	Frank Middleton, Marion	Artificial	None.
27251	Jelly	Bessire & Co., Indianapolis	Artificial	None.
27257	Jelly	E. A. Berry, Cambridge City	Artificial	None.
27258	Jelly	Oren Catt, New Castle	Artificial	None.
27259	Jelly	Richard Cunningham, Muncie	Artificial	None.
27262	Jelly	C. E. Hinkley, Muncie	Artificial	None.
27264	Jelly	Corn Product Refining Co., New York	Artificial	None.
27292	Jelly	H. G. Sponsel, Indianapolis	None	Benzoate.
27403	Apple Jelly	Old Vincennes Preserving Co., Vincennes	None	Saccharin.
27519	Fig Jam	Hirsch Bros., Chicago	None	Benzoate.
28012	Imitation Jelly	J. W. Allen & Co., Chicago	Artificial	None.
28013	Jelly	Corn Products Refining Co., New York	Artificial	None.
28015	Jelly	H. T. McElfresh, Muncie	Artificial	None.
28017	Jelly		Artificial	Benzoate.
28019	Jelly	F. F. Stettler, Indianapolis	Artificial	None.
28021	Jelly	Mr. Schumaker, Indianapolis	Artificial	None.

## LEMON EXTRACTS—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. G. at 20° C.	Polarisation 200 mm. Tube.	Per Cent. of Lemon Oil.	Per Cent. of Alcohol.
26081	National Grocery Co., South Bend.....	.8540	—10.1	6.31	76.62
26106	E. W. Woodsides, Elwood.....	.9372	—1.1	.7	45.92
26828	W. M. Guffer, Ft. Wayne.....		8.0	5.0	
26865	W. M. Guffer, Ft. Wayne.....				

## VANILLA EXTRACT.

Laboratory No.	Manufacturer or Retailer.	Vanillin.	Normal Lead Number.	Coumarin.	Sugar.	Remarks.
26223	C. E. Ruch, Indianapolis.....					Illegal, contains methyl alcohol.
26352	John Kotsvetes, Plymouth.....		.016			Illegal.
26353	John Kotsvetes, Plymouth.....		.035			Illegal.
26354	John Kotsvetes, Plymouth.....		.167			Illegal.
27140	Sent in from Richmond.....	.305		.125	11.86	Legal.

## FLOURS.

Laboratory No.	Sent in from.	Remarks.
26385	Sent in from Lacrosse.....	Small amount of wheat starch present. Illegal. Buckwheat flour.
26559	Sent in from Boone Grove.....	Buckwheat flour. Legal.
26640	Sent in from Bloomingdale.....	Corn flour. No foreign starch present. Legal.
27727	Sent in from Ft. Wayne.....	Graham flour. Legal.
27728	Sent in from Ft. Wayne.....	Graham flour. Legal.
27858	Sent in from Seymour.....	No foreign starch present. Legal.
28123	Sent in from Bedford.....	Not bleached. Legal.

## HONEY.

Laboratory No.	Where Collected.	Polarization.		Sucrose.	Reducing Sugars.	Total Ash.	Remarks.
		Direct.	Invert.				
28859	Lowell.....	—18.0	—22.0	3.07	74.9	.098	Legal.
28977	Marion.....	—12.0	—15.4	2.5	76.9	.042	Legal.



## LARD.

Forty samples of lard were analyzed during the year, of which 31 were pure and nine illegal. Six of the nine samples classed as illegal contained cottonseed oil in amounts varying from 5 to 40 per cent. Eight of the nine samples contained beef fat. One sample, although evidently a genuine lard, was made from poor stock and contained much foreign matter.

## LARD—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Butyro Reading at 40° C.
26046	Sent in from Greencastle.	51.0
26266	Mr. Oppenheim, Goshen.	49.0
26301	Sent in from Richmond.	49.1
26305	Sent in from Indianapolis.	
26403	Owens Bros., W. Terre Haute.	50.0
26444	Kuykendall & Son, W. Terre Haute.	50.3
26445	Lee Miller, W. Terre Haute.	50.0
26447	Harry Melroy, W. Terre Haute.	50.0
26491	Adam Ehalt, New Albany.	50.7
26494	White House Market, New Albany.	50.5
26497	Homer Blake, New Albany.	50.2
26500	August Oetkens, New Albany.	50.4
26502	Homer Ferree, New Albany.	51.3
26715	Sent in from Indianapolis.	50.2
26720	Sent in from Indianapolis.	50.6
26722	Sent in from Indianapolis.	51.0
26729	Sent in from Indianapolis.	50.2
26740	W. F. Woessner, Indianapolis.	50.5
26742	S. A. Butcher, Indianapolis.	50.8
26747	Hammond & Pasquer, Indianapolis.	50.5
26748	Otto Haffer, Indianapolis.	50.5
26755	E. L. Gorman, Greenfield.	50.2
26785	O. K. Meat Market, Indianapolis.	50.3
26790	Ice & Son, North Vernon.	50.0
26793	C. S. Crocker, North Vernon.	50.2
26796	Fox Bros., North Vernon.	49.8
26806	B. C. Kesner, Shirley.	50.3
26849	Krause & Boyer, Columbus.	50.8
26966	Peerless Meat Market, Lawrenceburg.	50.3
27702	Sent in from Princeton.	
27703	Sent in from Princeton.	

## LARD—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Butyro Reading at 40° C.	Remarks.
26333	John Leikauf, Ft. Wayne.	51.5	20% of cottonseed oil present. Beef fat present.
26334	John Leikauf, Ft. Wayne.	50.5	5% cottonseed oil present. Beef fat present.
26335	John Leikauf, Ft. Wayne.	51.7	40% cottonseed oil present. Beef fat present.
26336	John Leikauf, Ft. Wayne.	57.0	5% of cottonseed oil present. Beef fat present.
26337	National Meat Market, Ft. Wayne.	49.3	No cottonseed oil present. Beef fat present.
26727	F. E. Stone, Indianapolis.	49.4	No cottonseed oil present. Small amount of beef fat.
26741	W. E. Vanatta, Indianapolis.	52.3	Cottonseed oil present. Beef fat present.
26750	Cue Pippert, Indianapolis.	53.1	Cottonseed oil present. Beef fat present.
27704	Sent in from Princeton.		Sample made from poor stock. Contains much foreign matter and is not fit for food.

## MEAT.

One hundred and twenty-seven samples of meats, for the most part various types of sausage, were analyzed during the year, of which 91 were legal and 36 illegal. In all but three cases the samples were classed as illegal because of the presence of added starch usually in considerable quantities, and in many cases without doubt as an absorbent for excess water. But one sample contained preservatives. Two samples were classed as illegal because the meat when received was unfit for food.

## MEATS—LEGAL.

Laboratory No.	Classification.	Manufacturer or Retailer.	Starch.	Borax.	Sublimes.	Remarks.
26086	Garlic Sausage.	J. H. Lechtenspel, Richmond.	.036	.....	.....	Sausage stamped added cereal.
26087	Smoked Sausage	J. H. Lechtenspel, Richmond.	2.2	.....	.....	No arsenic and no strychnine present.
26090	Sausage (with cereal)	Chas. Sells, Richmond.	1.0	.....	.....	No coloring.
26241	Canned Meat.	Sent in from Terre Haute.	.....	.....	.....	
26384	Sausage.	W. F. Taylor, W. Terre Haute	None	None.	None	
26400	Pan Sausage.	H. McIlroy, Terre Haute.	None	None.	None	
26401	Weinervurst.	H. Fromme, Terre Haute	None	None.	None	
26448	Sausage.	Chas. A. Wynn, Terre Haute	None	None.	None	
26485	Weinervurst.	White House Market, New Albany	None	None.	None	
26495	Pork Sausage.	A. Eckhaus, Lafayette.	None	None.	None	
26505	Weinervurst.	J. M. McWilliams, Lafayette.	None	None.	None	
26506	Pan Sausage.	Gus Bonner, Lafayette.	None	None.	None	
26507	Pan Sausage.	J. Eckhaus, Lafayette.	None	None.	None	
26509	Bologna.	J. Eckhaus, Lafayette.	None	None.	None	
26510	Weinervurst.	John Kenzler, W. Lafayette	None	None.	None	
26511	Bologna.	John Kenzler, W. Lafayette	None	None.	None	
26512	Weinervurst.	W. E. Burke, Lafayette.	None	None.	None	
26513	Pan Sausage.	W. E. Burke, Lafayette.	None	None.	None	
26514	Bologna.	Wm. Bonner, Lafayette.	None	None.	None	
26515	Pan Sausage.	Wm. Bonner, Lafayette.	None	None.	None	
26516	Weinervurst.	John Kenzler, W. Lafayette	None	None.	None	
26517	Bologna.	J. Eckhaus, Lafayette.	None	None.	None	
26518	Link Sausage.	Cole & Mandl, Lafayette.	None	None.	None	
26520	Bologna.	Dryfus Packing Co., Lafayette.	None	None.	None	
26521	Weinervurst.	Dryfus Packing Co., Lafayette.	None	None.	None	
26522	Bologna.	Lafayette Delicatessen Co., Lafayette.	None	None.	None	
26523	Bologna.	Lafayette Delicatessen Co., Lafayette.	None	None.	None	
26525	Link Sausage.	John Kahl, Lafayette.	None	None.	None	
26526	Bologna.	John Kalberer, Lafayette.	None	None.	None	
26527	Liverwurst.	John Kalberer, Lafayette.	None	None.	None	
26529	Pan Sausage.	Dryfus Packing Co., Lafayette.	None	None.	None	
26530	Bologna.	Dryfus Packing Co., Lafayette.	None	None.	None	
26531	Pan Sausage.	Kaiser Bros., Lafayette.	None	None.	None	
26532	Weinervurst.	Kaiser Bros., Lafayette.	None	None.	None	
26535	Bologna.	Boller & Vink, Lafayette.	None	None.	None	
26536	Bologna.	George Roud, Lafayette.	None	None.	None	
26537	Liverwurst.	George Roud, Lafayette.	None	None.	None	
26538	Bologna.	David Kurtz, Lafayette.	None	None.	None	
26539	Weinervurst.	John Kink, Lafayette.	None	None.	None	
26540	Link Sausage.	John Kink, Lafayette.	None	None.	None	

26549	Oryzian	H. A. Stretch, Newcastle	None	None	None
26555	Wienersurst	Abie Stern, Logansport	None	None	None
26556	Sausage	Abie Stern, Logansport	None	None	None
26557	Sausage	J. H. Foley, Logansport	None	None	None
26558	Sausage	Elpers & Miller, Logansport	None	None	None
26559	Sausage	McDowell & Bros., Logansport	None	None	None
26563	Sausage	Routh Co., Logansport	None	None	None
26569	Sausage	M. F. Schick, Ft. Wayne	None	None	None
26621	Sausage	Cut Rate Meat Market, Indianapolis	None	None	None
26622	Bologna	A. Moldthan, Indianapolis	None	None	None
26642	Wienersurst	T. F. Gibson, Indianapolis	None	None	None
26643	Pan Sausage	T. F. Gibson, Indianapolis	None	None	None
26645	Pan Sausage	Wm. Burton, Indianapolis	None	None	None
26647	Port Sausage	G. J. Hammel, Indianapolis	None	None	None
26648	Pan Sausage	J. H. Kraemer, Indianapolis	None	None	None
26651	Pan Sausage	J. H. Kraemer, Indianapolis	None	None	None
26654	Bologna	Henry Ruckelhaus, Indianapolis	None	None	None
26656	Bologna	Pang Bros., Indianapolis	None	None	None
26657	Bologna	John Singer, Indianapolis	None	None	None
26676	Bologna	Frank Gross, Indianapolis	None	None	None
26711	Wienersurst	Columbia Grocery Co., Indianapolis	None	None	None
26712	Sausage	Columbia Grocery Co., Indianapolis	None	None	None
26713	Sausage	Oscar Bocher, Indianapolis	None	None	None
26716	Link Sausage	Crabill Brothers, Indianapolis	None	None	None
26718	Sausage	O. K. Meat Market, Indianapolis	None	None	None
26724	Pan Sausage	J. M. Bala, Indianapolis	None	None	None
26730	Pan Sausage	Mr. Nagle, Indianapolis	None	None	None
26731	Pan Sausage	Mr. Nagle, Indianapolis	None	None	None
26732	Wienersurst	H. K. Roberts, Indianapolis	None	None	None
26733	Pan Sausage	H. K. Roberts, Indianapolis	None	None	None
26734	Pan Sausage	S. A. Butcher, Indianapolis	None	None	None
26736	Frankfort Sausage	A. E. Vanatta, Indianapolis	None	None	None
26737	Frankfort Sausage	W. F. Woessner, Indianapolis	None	None	None
26738	Wienersurst	Cut Rate Meat Market, Indianapolis	None	None	None
26739	Pan Sausage	W. F. Woessner, Indianapolis	None	None	None
26743	Pan Sausage	Cut Rate Meat Market, Indianapolis	None	None	None
26744	Frankfort Sausage	Frank Shusler, Indianapolis	None	None	None
26746	Sausage	Otto Hofer, Indianapolis	None	None	None
26749	Sausage	Chas. Yager, Indianapolis	None	None	None
26752	Sausage	Hammond & Pasquer, Indianapolis	None	None	None
26754	Sausage	F. X. Gottwaller, North Vernon	None	None	None
26765	Sausage	Fox Brothers, North Vernon	None	None	None
26767	Sausage	R. H. Thrall, Indianapolis	None	None	None
26797	Sausage	Bueller Bros., Hammond	None	None	None
26854	Sausage	Independent Meat Market, Hammond	None	None	None
26868	Hamburger		None	None	None
26869	Hamburger		None	None	None

Some calcareous deposits present.

No coloring.

## MEATS—LEGAL—Continued.

Laboratory No.	Classification.	Manufacturer or Retailer.	Starch.	Borax.	Sulphites.	Remarks.
26899	Pork Sausage	Peerless Meat Market, Lawrenceburg	None	None	None	No coloring.
26907	Sausage	Sent in from Richmond	None	None	None	No preservatives.
26942	Meat	Samuel H. Michel, Tipton	None	None	None	No copper.
27101	Pork	Sent in from Howe	None	None	None	No trichinae present.
27265	Meat	Sent in from South Bend	None	None	None	

## MEATS—ILLEGAL.

Laboratory No.	Classification.	Manufacturer or Retailer.	Starch.	Borax.	Sulphites.	Remarks.
26088	Weisewurst	Chas. Sells, Richmond	1.2	None	None	Misbranded.
26089	Bologna	Anton Stalle & Son, Richmond	2.2	None	None	Misbranded.
26277	Weisewurst	W. H. Morris, Terre Haute	3.69	None	None	Adulterated.
26278	Sausage	Ehrmann & Co., Terre Haute	5.87	None	None	Adulterated.
26341	Hamburger	Kann Bros., Ft. Wayne	None	None	136	
26402	Pan Sausage	J. W. Adams, W. Terre Haute	Present	None	None	8.9% of starch present.
26519	Weisewurst	Cole & March, Lafayette	Present	None	None	
26524	Weisewurst	Lafayette Delicatessen Co., Lafayette	Present	None	None	
26617	Weisewurst	Cut Rate Meat Market, Indianapolis	Present	None	None	
26644	Liverwurst	Wm. Bruton, Indianapolis	Present	None	None	
26646	Weisewurst	G. J. Haunel, Indianapolis	Present	None	None	
26649	Weisewurst	J. H. Kraemer, Indianapolis	Present	None	None	
26650	Weisewurst	John Thron, Indianapolis	Present	None	None	
26652	Sausage	Buehler Bros., Indianapolis	Present	None	None	
26653	Frankfort Sausage	J. H. Kramer, Indianapolis	Present	None	None	No wrapper.
26655	Weisewurst	Paug Bros., Indianapolis	Present	None	None	
26658	Weisewurst	Frank Gross, Indianapolis	Present	None	None	
26675	Weisewurst	Buehler Bros., Indianapolis	Present	None	None	
26705	Meat	Louis Hunt, Lynnville	Present	None	None	26% zinc, trace of iron present.
26714	Weisewurst	Ossie Roeder, Indianapolis	Present	None	None	Small amount of starch present.
26717	Weisewurst	Frank Ward, Indianapolis	Present	None	None	Large amount of starch present.

28719	Weiswurst.	Dave Shane, Indianapolis.	Present.	None.	Large amount of starch present.
28726	Frankfort Sausage.	O. K. Meat Market, Indianapolis.	Present.	None.	Large amount of starch present.
28728	Weiswurst.	F. E. Stone, Indianapolis.	Present.	None.	Large amount of starch present.
28745	Weiswurst.	Russell & Co., Indianapolis.	Present.	None.	
28751	Sausage.	Gus Pippert, Indianapolis.	Present.	None.	
28753	Weiswurst.	Gus Pippert, Indianapolis.	Present.	None.	
28763	Weiswurst.	Ballard Packing Co., Marion.	Present.	None.	Large amount of starch present.
28764	Sausage.	Ballard Packing Co., Marion.	Present.	None.	Large amount of starch present.
28765	Weiswurst.	Ballard Packing Co., Marion.	Present.	None.	Large amount of starch present.
28766	Bologna.	Ballard Packing Co., Marion.	Present.	None.	Large amount of starch present.
28767	Bologna.	Ballard Packing Co., Marion.	Present.	None.	Small amount of starch present.
28851	Weiswurst.	Ballard Packing Co., Marion.	Present.	Present.	
27445	Port Sausage.	Wm. Scharf, Aurora.			Not suitable for human food.
27566	Port Chop.	Sent in from Marshall.			Meat not properly cured.
27996	Ham.	G. P. Ketchum, Bedford.			

**MAPLE PRODUCTS.**

Of the 16 samples of maple product analyzed, 11 were pure and five illegal. The illegal samples were all so listed because of incomplete concentration, the moisture content being higher than that allowed under the Indiana standard.

## MAPLE SUGARS—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Polarization.		Sucrose.	Total Ash.	Alkalinity of Ash.		Moisture.
		Direct.	Invert.			Soluble.	Insoluble.	
26975	S. W. Peary, Indianapolis	+76.8	-36.2	84.64	.71	.48	1.0	6.82
26989	D. E. Greenwalt, Topeka	+86.8	-32.2	89.47	.74	.42	.45	
26990	D. E. Greenwalt, Topeka	+86.4	-31.0	88.27	.88	.78	1.36	

## MAPLE SYRUP—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Polarization.		Sucrose.	Total Ash.	Alkalinity of Ash.		Moisture.
		Direct.	Invert.			Soluble.	Insoluble.	
26927	Ben F. Hann, Spencer	+69.1	-24.3	70.2	.41	.31	.54	28.76
26928	David Royer, Union City	+83.8	-23.1	65.3	.66	.48	.36	31.34
26974	David Warren, Carmel	+64.0	-23.1	65.40	.49	.36	.56	33.31*
26997	David C. Peyton, Jeffersonville	+65.2	-20.24	65.4	.50	.18	.52	31.62
27061	Coatie Bros., Wabash	+65.2	-20.24	65.4	.50	.18	.52	31.62
27105	T. J. Woodward, Richmond	+69.8	-20.0	75.1	.58	.36	.84	32.72
27106	James Worrell, Orleans	+48.0	-22.0	53.16	.54	.06	.56	26.6
27114	Lee Scott, Indianapolis	+55.8	-23.2	60.22	.64	.30	.52	28.7

\*Moisture a little high.

## MAPLE SYRUP—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Polarization.		Sucrose.	Total Ash.	Alkalinity of Ash.		Moisture.
		Direct.	Invert.			Soluble.	Insoluble.	
26830	N. W. Emery, Bloomfield	+58.0	-21.1	59.03	.42	.30	.54	40.64*
27092	Sent in from Indianapolis	+45.6	-19.0	48.1	.98	.92	.26	36.17*
27093	Sent in from Cincinnati	+50.8	-16.0	50.7	1.01	1.28	.6	40.19*
27191	Sent in from Indianapolis	+69.8	-24.0	72.6	.62	.36	.45	34.83*
28026	Sent in from Ooltic	+62.6	-23.3	64.5	.55	.60	.60	33.68*

\*Excess water.



## PICKLES.

Seven of the 12 samples of pickles analyzed were listed as illegal, in every instance because of the presence of alum. Four samples were in addition preserved with benzoate of soda.

## PICKLES, ETC.

Laboratory No.	Classification.	Manufacturer or Retailer.	Remarks.
26470	Sweet Pickles .....	Chas. E. Wells, Angola .....	Alum and benzoate of soda present. Illegal.
26471	Pickles .....	Mr. White, Versailles .....	Alum present. Benzoate of soda present. Illegal.
26472	Pickles .....	Calles & Sons, Madison .....	Alum and benzoate of soda absent. Legal.
26473	Pickles .....	H. G. Schneider, Madison .....	Alum and benzoate of soda absent. Legal.
26474	Pickled Onions .....	Mr. Mets, New Point .....	Alum and benzoate of soda absent. Legal.
26832	Pickles .....	Sent in from Marion .....	Alum and benzoate of soda absent. Legal.
27144	Pickles .....	S. G. Engle, Gary .....	Alum absent. Legal.
27413	Sweet Mixed Pickles .....	Old Vincennes Preserving Co., Vincennes .....	Saccharin, benzoate of soda and alum present. Illegal.
27414	Piccalilli .....	Old Vincennes Preserving Co., Vincennes .....	Saccharin, benzoate of soda and alum present. Illegal.
27415	Celerine Relish .....	Old Vincennes Preserving Co., Vincennes .....	Saccharin and alum present. Illegal.
27416	Sour Pickles .....	Old Vincennes Preserving Co., Vincennes .....	Benzoate of soda absent. Alum present. Illegal.
27417	Pickles .....	Bert Balsley, Upland .....	Benzoate of soda absent. Alum present. Illegal.

## SUGAR.

During the year 11 samples of sugar were submitted for analysis, in every instance by customers who doubted its purity. Eight samples were powdered sugar and contained varying amounts of starch, but in no case was the starch content so excessive as to list the sample as an adulterated product.

## SUGAR.

Laboratory No.	Sent in from.	Per Cent. of Sucrose.	Remarks.
25980	Sent in from Indianapolis .....	98.8	Powdered sugar. Starch by direct weight 1.61%. Legal.
25981	Sent in from Indianapolis .....	98.1	Powdered sugar. Starch 2.97. Legal.
26064	Sent in from Indianapolis .....		Powdered sugar. Starch 1.23. Legal.
26065	Sent in from Indianapolis .....		Powdered sugar. Starch 4.36. Legal.
26066	Sent in from Indianapolis .....		Powdered sugar. Starch .54. Legal.
26067	Sent in from Indianapolis .....		Powdered sugar. Starch 3.40. Legal.
26068	Sent in from Indianapolis .....		Powdered sugar. Starch 4.36. Legal.
26069	Sent in from Indianapolis .....		Powdered sugar. Starch 4.82. Legal.
26821	Sent in from Freelandville .....	99.80	Legal.
27159	Sent in from Ft. Wayne .....		Quarts sand and ordinary dirt present.
27481	Sent in from Hammond .....		

## SORGHUM MOLASSES AND SYRUPS.

Laboratory No.	Manufacturer or Retailer.	Polarisation.		Sucrose.	Glucose.	Remarks.
		Direct.	Invert.			
26285	Sent in from Indianapolis.....	+33.2	+7.4	23.3	8.5	Labelled 10% glucose. Legal.
26308	Jonas Strause, Terre Haute.....	+40.4	-17.8	43.59	None	Legal.
27097	Sent in from Indianapolis.....					Preservatives suspected, none found.
27195	Land Bros., Greenfield.....					Illegal. Glucose not declared.
27170	W. A. Thornburg, Muncie.....	+101.0	+53.2	37.0	38.0	Legal.
28603	Sent in from Indianapolis.....	+60.6	-24.2	65.1	None	Legal.
28856	Sent in from Indianapolis.....	+31.0	-14.4	34.0	None	Legal.
28857	Sent in from Indianapolis.....	+51.0	-17.82	51.80		Excess water (40.9%).
		+39.2	-21.34	45.7		Water 34.24%.
28858	Sent in from Indianapolis.....	+53.0	-19.8	58.7		Legal.

## TOMATO PRODUCTS.

Fourteen samples of tomato products were analyzed during the year, six of which were classed as illegal. Four of the illegal samples contained benzoate of soda. The other samples were so listed because of their high bacterial count.

## TOMATO PRODUCTS.

Laboratory No.	Classification.	Manufacturer or Retailer.	Per Cent. of Benzoate of Soda.	Per Cent. of Moulds.	Remarks.
26684	Catsup.....	G. F. Retse, Brookville.....	None.....	.....	Legal.
26685	Catsup.....	Sent in from Richmond.....	Present.....	.....	Illegal.
26686	Catsup.....	Sent in from Richmond.....	Present.....	.....	Illegal.
26768	Catsup.....	Crooks & West, Greensburg.....	Present.....	.....	Illegal.
26770	Catsup.....	Ed. Kemf, Madison.....	Present.....	.....	Illegal.
26859a	Tomato Pulp.....	Jeffersonville Canning Co., Jeffersonville.....	.....	18.0	Legal.
26859b	Tomato Pulp.....	Jeffersonville Canning Co., Jeffersonville.....	.....	16.0	Legal.
26859c	Tomato Pulp.....	Jeffersonville Canning Co., Jeffersonville.....	.....	16.0	Legal.
26859d	Tomato Pulp.....	Jeffersonville Canning Co., Jeffersonville.....	.....	20.0	Legal.
26860	Tomato Pulp.....	Schnull & Co., Indianapolis.....	.....	.....	Legal.
27420	Catsup.....	A. Lickerson, Upland.....	.....	.....	Legal.
28970	Catsup.....	Indiana Tomato Seed Co., Nabb.....	.....	16.0	Illegal.
28971	Catsup.....	Indiana Tomato Seed Co., Nabb.....	.....	14.0	Illegal.
26272	Chili Sauce.....	Fraser & Co., Kokomo.....	None.....	16.0	Legal.

## MISCELLANEOUS FOOD PRODUCTS.

Many samples of miscellaneous food products are now received at the laboratory. The table below is attached for the purpose of showing the variety of these samples. For the most part the analysis shows no violation of the Pure Food Law. In some instances samples of bread upon examination show the presence of cockroaches; figs contain worms and filth; cornmeal and other cereal products are frequently dirty. Such violations of the law cannot be called intentional and usually result from carelessness in handling. They are none the less to be deplored, and customers are urged to report all similar cases to the department.

## MISCELLANEOUS FOOD PRODUCTS.

Laboratory No.	Manufacturer or Retailer.	Classification.	Remarks.
26049	Paoli Milling Co., Paoli	Corn Meal	Wormy.
26261	James Isbell, Syracuse	Bread	Firry.
26332	Sent in from Indianapolis	Oats	Bleached with sulphur dioxide. Illegal.
26545	Harry L. Willis, Indianapolis	Oyster Liquor	Legal.
26735	J. T. Polk Co., Greenwood	Hominy	Not sterile.
26856	Sent in from Marion	Worcestershire Sauce	Benzoate of soda present. Illegal.
26905	Lettellier & Son, Bloomington	Dry Lemon Pie Filler	Preservatives absent. Legal.
26906	Lettellier & Son, Bloomington	Dry Cream Puff Filler	Preservatives absent. Legal.
26907	Acme Company, Fort Wayne	Jell Compound	Benzoate of soda present. Illegal.
26929	A. H. Perfect & Co., Fort Wayne	Hominy	Sample not sterile.
27125	Sent in from Michigan City	Figs	Mouldy.
27327	Sent in from Indianapolis	Marshallow Creme	Legal.
27408	Evansville Brewing Assn. Evansville	Malt	Illegal. Not a malt product.
27480	O. S. Nixon, Richmond	Ice Cream Filler	Entirely gum trazacanth. Legal.
27648	Sent in from Hammond	Cherries	Legal.
28126	A. Mayerhofer, South Bend	Bread	Carbohydrates 45%. Illegal. Not a gluten bread.
28127	Chas. Weiss, South Bend	Bread	Legal.
28980	John Benedict, Muncie	Apple Compound	Legal.
29017	Sent in from Muncie	Jelly Cake	Benzoate of soda present. Illegal.

## REPORT FROM THE DRUG LABORATORY.

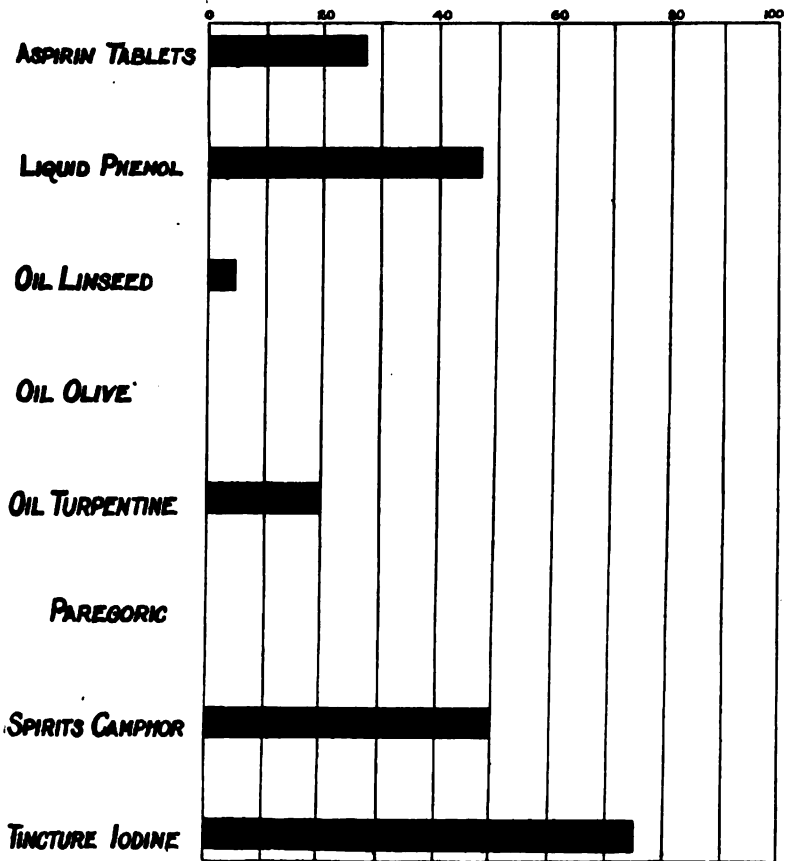
For several years the work of the drug laboratory has been confined largely to the examination of samples sent in by physicians and other interested persons. The necessity for the constant examination of samples collected at pharmacies is passing, and inspectors now pay far less attention to the purchase of tincture of iodine, spirits of camphor, lime water and the long list of the usual druggist's stock than when the law was new and little understood. Occasional analyses still show the necessity for care on the part of the pharmacist. Not every product he dispenses is of full strength, and prescriptions may occasionally leave his counter that differ from the desire of the physician. Nevertheless, we believe that far more efficient and helpful work may be done by the drug laboratory in an endeavor to control the sale of fraudulent nostrums than by a constant supervision over the affairs of the pharmacist. We have therefore, during the past year, in addition to the special work above referred to, devoted much of the time of the laboratory to the analyses of samples referred to in the appended table of Medical Frauds, and in the examination of series of samples of carbolic acid, aspirin tablets, paregoric and spirits of camphor.

During the year 294 drug samples were examined, of which 261 were classed as legal and 33, or 11.2 per cent. illegal.

### RESULT OF ANALYSES OF DRUG SAMPLES FOR THE YEAR ENDING OCTOBER 1st, 1913 TO SEPTEMBER 30, 1914.

ARTICLE.	Legal.	Illegal.	Total.	Per Cent Adultera- tion.
Aspirin Tablets.....	13	5	18	27.7
Liquid Phenol.....	12	11	23	47.8
Oil Linseed.....	20	1	21	4.7
Oil Olive.....	5		5	
Oil Turpentine.....	4	1	5	20.0
Paregoric.....	10		10	
Patent Medicines.....	65		65	
Peroxide of Hydrogen.....	9		9	
Spirits Camphor.....	9	9	18	50.0
Tincture Iodine.....	2	6	8	75.0
Toilet Preparations.....	28		28	
Miscellaneous Drugs.....	84		84	
Total.....	261	33	294	

## PERCENTAGE OF ADULTERATION OF DRUGS ANALYZED IN INDIANA 1914



## TOILET PREPARATIONS AND ADVERTISED PROPRIETARIES.

In an attempt to curb the sale of much advertised and consequently widely sold prescription proprietaries, we have analyzed a large number of the best known representatives of this class of toilet and so-called medicinal preparations. These results have been compiled and published under the caption:

### MEDICAL FRAUDS.

#### THIRD EDITION.

The demand for the first and second edition of "Medical Frauds" has been so great that we present herewith as our third edition a greatly enlarged list made up of the fraudulent, near fraudulent, worthless and over-priced preparations analyzed in our laboratories. It will be plain to everyone reading the column showing the composition of the preparations that most of these widely advertised articles contain nothing but common chemicals such as epsom salts, sulphur, borax, soap, baking soda, alum and table salt.

It may be that included in the list are preparations which are of some value for the purpose for which they are recommended. Without doubt the depilatories or hair removers do remove hair, and it is quite probable that bichloride of mercury will remove freckles. It may be that solutions of borax and alum will disguise the odor of perspiration, and salicylic acid is not an uncommon remedy for rheumatism.

Our criticism of all of these preparations is first, that they are sold at exorbitant prices, and second, that the story of their effect is but half told. Of course it is possible to remove hair by dissolving it in various sulphides. The label however, does not say that the hair although removed, will grow again coarser and stronger than ever. No indication is given in the advertisement that when the bichloride of mercury removes the freckles it removes the skin as well and that the preparation is a dangerous poison.

We cannot refrain from wondering if the large number of absorbents, deodorizers, and remedies for excessive perspiration is an indication that the beneficial effects of soap and water have been forgotten and that we are returning to the conditions of the middle ages when perfumes were antidotes for dirty bodies.

We can but wonder at the faith and innocence of the reader who seeing in the columns of the Sunday paper the suggestive advertising of the "Health and Beauty Hints" published over the names of Valeska Suratt, Mrs. Mae Martyn, Claire Ainsworth and good old Dr. Lewis Baker, rushes to the drug store to spend hard earned money for worthless medicines and toilet accessories.

The manufacturers of these goods, which are of the class commonly called "prescription proprietaries," have carefully, and in most cases successfully avoided any violation of the food and drug law. The labels and

packages carry no statement as to their composition, and little argument for their worth. Indeed, after one has been convinced by reading "Health and Beauty Hints" that Canthrox, Spurmax, Villane Powder and Parnotis, will, like a magician's wand, dissolve her troubles and sweep away her many ills, statements on the cartons and packages are quite unnecessary.

It is impossible for us to tell the truth to the thousands who waste their money in the purchase of such goods. We hope, however, that the facts in this circular may through the press, clubs, and schools, in time become common knowledge.

Help to cut down the cost of living by telling these facts. Remember always that there are two reasons why the preparations listed should not be used; first, as medicinal preparations they are of little or no value, and second, they are common chemicals which can be purchased at any drug store for one-tenth the price asked when sold under disguising names.



Name.	Manufacturer.	Manufacturer's Claim.	Contains.	Retail Price.	Value of Ingredients.
Absorbit.....	Von Vogel Laboratories, Chicago, Ill.	"Absorbs perspiration and odor"	Boric acid.....18% Magnesium carbonate.....40% Alum.....10% Calcium carbonate.....25%	\$0 25	\$0 02
Almasoin.....	H. S. Petersen and Co., Chicago, Ill.	"Fine for beautifying the arms, face and neck."	Borax.....27% Magnesia.....25% Gum tragacanth.....40%	50	03
Alpen Seal.....	Alphen Chemical Co., Chicago, Ill.	"Increases woman's power"	Oil of cinnamon, glycerine, saccharin and extractives.	50	02
Amarol.....	F. W. Scharff Co., Chicago, Ill.	Complexion beautifier.	Epsom Salts.....95% Borax.....5%	50	01
Am-O-Tone.....	Am-O-Tone Co., Detroit, Mich.	Dry shampoo	Borax.....99%	75	05
Anasyme.....	Malthie Chemical Co., Newark, N. J.	"Makes an excellent gargle for tonsillitis"	Borax.....50% Alum.....20% Boric acid.....24%	50	03
Anti Freckle Lotion.....	E. B. Gustin, Logansport, Ind.	"Removes freckles"	Bichloride of mercury.....1.5% Alcohol.....2% Water.....90%	50	01
Bad-Em-Sals.....	The American Laboratories, Phila., Pa.	"A substitute for mineral water"	Salt.....13% Glauber's salt.....15% Baking soda.....30% Cream of tartar.....5%	25	02
Barbo Compound.....	Barbo Mfg. Co., Kansas City	"Removes dandruff and scalp humors"	Sugar of lead.....28% Sulphur.....17% Glauber's salt.....16% Salt.....15% Calcium chloride.....14% Water.....10%	50	03
Barbols Compound.....	Old Fort Chemical Co., Ft. Wayne, Ind.	"A powerful diuretic, blood purifier and tonic."	Potassium acetate, licorice, and glycerine	50	02

Berchets.	The Berchets Co., Chicago, Ill.	Flesh reducer. "Mild—Simple—Beneficial."	Boric acid.....58% Sugar.....18% Sorgh.....21% Water.....6%	1 00	02
Beta-Canthol.	F. W. Scharff Co., Chicago, Ill.	Hair tonic	Alcohol, resorcin, beta-naphthol, menthol and quinine.	75	07
Beta-Quinol.	Cooper Pharmacal Co., Chicago, Ill.	"Makes the best hair grower"	Quinine, resorcin, menthol, beta-naphthol and alcohol.	50	05
Bisulcated Magnesia	International Druggists' and Chemists' Laboratories, New York City.	"Corrects heartburn, distress after eating bad, sour breath."	Bismuth subcarbonate.....6% Magnesium sulphate.....62% Magnesium sulphate.....25% Calcium carbonate.....9%	50	05
Boro-Listor.	F. W. Scharff Co., Chicago, Ill.	"Recommended for catarrh conditions; lotion in wounds and t. cheek perspiration."	Commercial boric acid and a trace of eucalyptus.	50	02
Borothol.	F. W. Scharff Co., Chicago, Ill.	Eczema remedy	Sodium thiosulphate.....58% Borax.....18% Water.....26%	75	02
Brovene	The Brovone Co., Detroit, Mich.	Cleanses the hair and makes it fluffy and lustrous.	Borax.....99%	75	05
Canthrov.	H. S. Petersen and Co., Chicago, Ill.	"Gives to the hair that exquisite fluff and wavy softness that will insure a lovely growth."	Granulated soap	50	02
Capthol.	F. W. Scharff Co., Chicago, Ill.	Hair tonic	Borax.....48% Meal.....57%	75	
Citrox.	United Citrox Co., Detroit, Mich.	Eczema remedy	Entirely sodium thiosulphate.	50	02
Cleorla	G. W. Carpenter, Jaffrey, N. H.	"Whitens the skin"	Entirely sulphur	50	01
Coconide	Montgomery Chemical Co., Dayton, Ohio	"Coconide is remarkable for the lustrous fluffy nature that it imparts to the hair."	Borax.....53% Soap.....17%	25	03
Crytoss.	H. S. Petersen and Co., Chicago, Ill.	"Restores brilliancy and expressiveness to dull eyes."	Salt.....27% Borax.....36% Boric acid.....45%	50	02
Cuticle Acid.	Richard Hudnut, New York, City	"Removes dead skin"	Alcohol.....10% Citric acid.....9%	25	01

Name.	Manufacturer.	Manufacturer's Claim.	Contains.	Retail Price.	Value of Ingredients.
Dandruff-Cide.....	Ward and Co., Chicago, Ill.	"The world famous dandruff destroyer."	Entirely sal soda.....	\$1 00	\$3 03
DeLotion.....	Sheffield Pharmaceutical Co., Chicago, Ill.	Superfluous hair remover.....	Barium sulphide..... 8% Barium sulphate..... 7% Starch..... 85%	1 00	01
De Miracle.....	De Miracle Chemical Co., New York City.	"Removes hair".....	Sodium sulphide..... 8% Water..... 92%	1 00	02
Delol.....	F. W. Scharff Co., Chicago, Ill.	"For removing superfluous hair".....	Barium sulphate..... 14% Barium sulphide..... 14% Sulphur..... 4% Calcium carbonate..... 3% Zinc oxide..... 17% Starch..... 49%	75	02
Deodorizing Cream.....	H. Hasten, Chicago, Ill.	"Destroys and neutralises the odor of perspiration."	Zinc oxide..... 49% Fatty base..... 50%	25	03
Depilatory.....	H. Hasten, Chicago, Ill.	"Will not injure the texture of the skin."	Sulphur..... 7% Barium sulphate..... 25% Barium sulphide..... 21% Calcium carbonate..... 10% Starch..... 37%	50	03
Depilatory.....	Harriett Hubbard Ayres, New York City.	"For removing hair".....	Barium sulphide..... 32% Starch..... 67%	1 00	02
Dorothy Vernon Shampoo.....	The Jennings Co., Grand Rapids, Mich.	Shampoo.....	Soap..... 78% Box..... 22%	50	02
Eggol.....	F. W. Scharff Co., Chicago, Ill.	Shampoo.....	Soap..... 43% Box..... 38% Potassium carbonate..... 21%	25	02
E-Lip-Tine.....	Miller Medicine Co., St. Marys, Kansas	"For the permanent cure of epilepsy".....	Sodium and potassium bromides. 16% Alcohol..... 8% Ammonium valerate.....	1 75	10

Epp-O-Tone.....	La Cotte Mfg. Co., Chicago, Ill.....	Complexion beautifier.....	Essenc. salts..... 80% Borax..... 20%	50	02
Eptol.....	Cooper Pharmaceutical Co., Chicago, Ill.....	"Whitens the skin".....	Stearic acid and soap..... 75% Borax..... 17% Water..... 8%	50	03
El Rado.....	Pilgrim Mfg. Co., New York City.....	"The guaranteed liquid hair destroyer".....	Sodium sulphide..... 5% Glycerine..... 10% Water..... 85%	1 00	02
E-Ru-Sa.....	Dr. L. Griffin, Los Angeles.....	"E-Ru-Sa removes piles or \$50 paid".....	Charcoal, sulphur, tannic acid and vase- line.....	1 00	03
Fat-Off.....	M. S. Borden, Brooklyn, N. Y.....	"Obesity cream".....	Soft soap.....	1 50	05
Flowers of Oxzin.....	To-Kalon Mfg. Co., Syracuse, N. Y.....	"Unsurpassed for restoring a youthful appearance".....	Zinc oxide..... 22% Glycerine..... 18% Water..... 60%	50	03
Fluid Balmwort.....	Prescription Products Co., Dayton, Ohio.....	"Cures chronic bed wetting".....	Potassium acetate..... 41% Water and extractives.....	50	02
Fluid En-Ser-Ol.....	E. C. D. Chemical Co.....	"Catarrh Cure".....	Cinnamon, camphor, water and baking soda.....	1 00	02
Freckle Cream.....	Stillman Freckle Cream Co., Aurora, Ill.....	"Removes freckles".....	Ammoniated mercury..... 10%	50	03
Fruitola.....	Pinus Medicine Co., Los Angeles, Cal.....	"For gall-stones and stomach trouble".....	Olive oil, sedlits powder.....	1 00	15
Glorial Balm.....	The Leslie Co., Dayton, Ohio.....	"Improves and preserves the complexion".....	Stearic acid, soap and borax..... 23 7% Water..... 76 3%	25	01
Glorial Glowene.....	The Leslie Co., Dayton, Ohio.....	"Skin cleanser".....	Soft soap.....	25	02
Glorial Wavolene.....	The Leslie Co., Dayton, Ohio.....	"For cutting and waving the hair".....	Camphor and g'm..... 5% Potassium carbonate..... 1% Alcohol..... 1% Water..... 92%	50	02
Grace's Mineral Salts.....	Grace Mineral Salts Co., Evansville, Ind.....	"Is the fastest blood maker in the world".....	Baking soda..... 45% Salt..... 38% Rochelle salt..... 17%	50	05
Hall's Catarrh Cure.....	F. J. Cheney & Co., Toledo, Ohio.....	"Catarrh cure".....	Potassium iodide..... 6% Alcohol..... 14% Extractives.....	75	05

Name.	Manufacturer.	Manufacturer's Claim.	Contains.	Retail Price.	Value of In- gredients.
Hairwand .....	The Leslie Co., Dayton, Ohio.	"Hair restorer"	Salt ..... 47% Borax ..... 47% Sodium salicylate ..... 6%	\$0 50	\$0 02
Hay's Hair Health .....	Plafio Hays Spec. Co., Newark, N. J.	"Hair restorer"	Sugar of lead ..... 1.5% Sulphur ..... 1.5% Alcohol and water.	50	05
Heaton's Rheumatic Remedy .....	Huntington Remedy Co., Huntington, Ind.	"Neutralizes the uric acid in the system"	A solution of sal soda in water.	50	02
Kulux Compound .....	Kulux Mfg. Co., Rochester, N. Y.	"Skin food"	Zinc oxide ..... 7% Bismuth subcarbonate ..... 5% Glycerine ..... 10% Water ..... 78%	50	04
Kargon Compound .....	Kargon Extract Co., Cincinnati, Ohio.	"As an act of humanity, recommend this to your suffering relatives"	Potassium acetate ..... 23% Alcohol and extractives	50	02
Luxor .....	H. S. Petersen & Co., Chicago, Ill.	Eczema remedy.	Boric acid ..... 60% Zinc oxide ..... 25% Water ..... 15%	50	02
Magnasurate Compound .....	International Druggists' and Chemists' Laboratories, Syracuse, N. Y.	"Corrects heartburn and distress after eating."	Sal soda ..... 20% Calcium carbonate ..... 30% Magnesium oxide ..... 47%	50	02
Magnet. ....	Magnet Remedy Co., Noblesville, Ind.	"Nature's assistant for the blood, liver and kidneys."	Sulphur ..... 25% Potassium sulphate ..... 18% Magnesium carbonate ..... 18% Magnesium citrate ..... 11% Magnesium Tartrate ..... 7% Water ..... 20%	50	02
Marmola .....	Marmola Co., Detroit, Mich.	"Reduces a pound or more a day"	Dried thyroid gland and phenolphthalein.	50	02
May-O-Tone .....	May-O-Tone Co., Chicago, Ill.	"Protection against tan, freckles and sunburn."	Borax ..... 50% Epsom salts ..... 50%	50	02
Mayr's Stomach Remedy .....	Geo. H. Mayr, Chicago, Ill.	"Removes gall-stones without operation"	Olive oil with epsom and Rochelle salts.	1 00	15

Mercolised Wax.....	Dearborn Supply Co., Chicago, Ill.....	"Removes the complexion"	Zinc oxide..... 9%	05
Modene.....	Modene Mfg. Co., Cincinnati, Ohio.....	"For removing objectionable hair"	Ammoniated mercury..... 9%	02
Nature's Creation.....	Nature's Creation Co., Columbus, Ohio.....	Consumption cure.....	Talc..... 65%	25
Neroxin.....	Cooper Pharmaceutical Co., Chicago, Ill.....	"Blackhead eradicator"	Magnesia..... 20%	03
Nervine.....	Nervine Co., Ft. Wayne, Ind.....	"Recommended for nervousness and epilepsy"	Calcium sulphide..... 9%	04
Odor-O-No.....	Odor-O-No Co., Cincinnati, Ohio.....	"Prevents excessive perspiration"	Potassium iodide..... 6%	02
Olive Tablets.....	Olive Tablet Drug Co., Columbus, Ohio.....	"A substitute for calomel"	Borax..... 55%	03
On-Riah.....	On-Riah Co., Cincinnati, Ohio.....	Hair remover.....	Borax..... 25%	04
Orrine.....	The Orrine Co., Washington, D. C.....	"A reliable remedy for the treatment of the liquor habit."	Camphor, glycerine and valerian.....	02
Othine.....	Othine Laboratory, Buffalo, N. Y.....	"R emoves freckles"	Aluminum chloride..... 20%	005
Parnolis.....	H. S. Petersen & Co., Chicago, Ill.....	"Makes you weigh just what you want to."	Resorcin..... trace	03
Partins.....	R. Partins Co., Boston, Mass.....		Aloes..... 10	03
Peastrol Concentrated.....	Aodine Chemical Co., Pittsburg, Pa.....		Talc..... 45%	03
Perpi-No.....	Perpi Co., Chicago, Ill.....	"For sprains"	Barium sulphide..... 17%	06
Persipine.....	H. Hatten, Chicago, Ill.....	"Stops excessive perspiration, also destroys odor."	Starch..... 40%	01
Pinus.....	Pinus Medicine Co., Los Angeles, Cal.....	"For excessive perspiration and odors arising from the skin."	Sugar..... 85%	03
		"For rheumatism and neuralgia"	Ammonium chloride..... 17%	03
			Gold chloride..... trace	06
			Ammoniated mercury..... 25%	01
			Baking soda..... 79%	03
			Glauber's salt..... 21%	03
			Borax..... 60%	05
			Water..... 40%	02
			Half strength tincture of iodine.....	02
			Boric acid..... 20%	02
			Sulphuric acid..... 25%	02
			Talc..... 45%	02
			Calcium carbonate..... 10%	02
			Borax..... 18%	02
			Talc..... 65%	02
			Zinc oxide..... 4%	02
			Water.....	02
			Turpentine..... 85%	05
			Magnesia..... 15%	05

Name.	Manufacturer.	Manufacturer's Claim.	Contains.	Retail Price.	Value of In- gredients.
Plain Yellow Minylol.....	Prescription Products Co., Dayton, Ohio.	"Promotes a healthy, vigorous growth of hair, cures dandruff, itching scalp and hair."	Salt..... 75% Water..... 22% Fat..... 3%	\$0 90	\$0 02
Potocote.....	The Potocote Co., Canton, Ohio.	"The condensed mineral water"	Baking soda..... 12% Glauber's salt..... 49% Potassium sulphate..... 12% Water..... 27% Lithium..... trace.	35	02
Proxin.....	Sheffield Pharmaceutical Co., Chicago, Ill.	"Makes eyebrows long and silky"	Vaseline perfumed with oil of bergamot.	1 00	02
Quintone.....	The Quin-Tone Co., Detroit, Mich.	"For treatment of the scalp"	Sodium thiosulphate..... 80% Borax..... 20%	75	02
Quinazin.....	H. S. Petersen and Co., Chicago, Ill.	"Corrects profuse dandruff, excess oiliness and other defects."	Baking soda..... 37% Quassia bark..... 60% Quinine..... trace.	50	03
Rumo-Sac.....	The Rumo-Sac Co., Toledo, Ohio.	"Rumo-Sac will absolutely kill your rheumatism."	Entirely powdered alum.	1 00	01
Rheumatic Tablets.....	Newell Remedy Co., Indianapolis, Ind.	For rheumatism.....	Salt..... 20% Sal ammoniac..... 80%	50	01
Rheuma Vita.....	Haumer Chemical Co.	"For rheumatism and neuralgia"	Salicylic acid..... 85%	50	02
Rose-Kayloin.....	The Blackburn Products Co., Dayton, Ohio.	"It eliminates skin troubles, soothes the itching and heals the sores."	Sulphur..... 80% Potassium carbonate..... 15%	50	01
Sarsene.....	Cooper Pharmaceutical Co., Chicago, Ill.	"A blood remedy"	Extracts of senna, sarsaparilla, etc.	50	03
Sartin.....	Globe Pharmaceutical Co., Chicago, Ill.	"Beautifies the complexion"	Epsom salts..... 45% Boric acid..... 1% Water..... 43%	50	02
Sarolite.....	Dearborn Supply Co., Chicago, Ill.	"Wrinkles and sagging are corrected and the face feels so refreshed and snug-like."	Epsom salts..... 44% Alum..... 56%	65	01
Saylen.....	Saylen Mineral Co., Indianapolis, Ind.		Common salt	25	005
Spurmax.....	H. S. Petersen and Co., Chicago, Ill.	"No fear of tan or freckles if applied daily."	Entirely Epsom salts	50	02

Sulpho-Solution.....	Cooper Pharmaceutical Co., Chicago, Ill.....	"Superfluous hair remover".....	Sodium sulphide..... 9% Water..... 91%	1 00	01
Sweeto-Powder.....	The Standard Chemical Co., Chicago, Ill.....	"Prevents excessive perspiration and instantly destroys objectionable odors."	Zinc oxide..... 32% Starch..... 45% Talc..... 21%	25	03
Thargol Compound.....	Indiana Pharmaceutical Co., Ft. Wayne, Ind.....	"For diseases of the nervous system"	Strontium bromide..... 18% Calcium bromide..... 4% Coumarin and vanillin.....	50	03
Therox.....	American Therox Co., Windsor, Ont.....	Dry shampoo.....	Entirely borax.....	75	05
Thomine.....	Michigan Thomine Co., Detroit, Mich.....	"For the treatment of the skin"	Boric acid..... 8% Epsom salts..... 49% Water..... 43%	75	03
Tincture Cadomene.....	Prescription Products Co., Dayton, Ohio.....	"Gives increased weight, pink cheeks and restores ambulation."	Damiana, cinchona and phosphorus.....	60	04
Toris Compound.....	Globe Pharmaceutical Co., Chicago, Ill.....	"Rheumatism eradicator and system builder."	Sugar..... 67% Sodium salicylate..... 9% Saltpeter..... 22%	50	02
Traxo.....	Pinus Medicine Co., Los Angeles, Cal.....	"For the liver, kidneys and skin"	Taraxacum and cascara.....	1 00	15
Tyree's Compound Antiseptic Powder.....	J. S. Tyree.....	"For catarrhal and infected conditions of the mucous membrane."	Zinc sulphate..... 27% Boric acid..... 70%	25	02
Varlex.....	Varlex Mfg. Co., Kansas City, Mo.....	"For iraking a liquor and tobacco habit remedy."	Milk sugar..... 99.5%	50	01
Vilane Powder.....	Blackburn Products Co., Dayton, Ohio.....	"Catarrh cure"	Salt..... 42% Baking soda..... 33% Borax..... 14% Sodium salicylate..... 11%	50	02
Wrinkle Lotion.....	Sarah Thompson, Terre Haute, Ind.....	"Removes wrinkles"	Alum..... 7% Glycerine..... 29% Water..... 64%	50	03
Zeero Powder.....	Miami Valley Chemical Co., Dayton, Ohio.....	"For excessive perspiration"	Borax..... 27% Zinc oxide..... 13% Calcium carbonate..... 15% Talc..... 35%	25	02
Zintone.....	Cooper Pharmaceutical Co., Chicago, Ill.....	"Makes any skin bloom out in the most supple tint and purity."	Four-fifths stearic acid and soap, one fifth borax.....	50	03



Name.	Manufacturer.	Manufacturer's Claim.	Contains.	Retail Price.	Value of Ingredients.
Absorbit.....	Von Vogel Laboratories, Chicago, Ill.....	"Absorbs perspiration and odor"	Boric acid.....18% Magnesium carbonate.....40% Alum.....10% Calcium carbonate.....22%	\$0 25	\$0 02
Almasoin.....	H. S. Petersen and Co., Chicago, Ill.....	"Fine for beautifying the arms, face and neck"	Borax.....27% Magnesia.....33% Gum tragacanth.....40%	50	03
Alpen Seal.....	Alphen Chemical Co., Chicago, Ill.....	"Increases woman's power"	Oil of cinnamon, glycerine, saccharin and extractives.	50	02
Amarol.....	F. W. Scharff Co., Chicago, Ill.....	Complexion beautifier.....	Epsom Salts.....95% Borax.....5%	50	01
Am-O-Tone.....	Am-O-Tone Co., Detroit, Mich.....	Dry shampoo.....	Borax.....99%	75	05
Anarsyme.....	Maltbie Chemical Co., Newark, N. J.....	"Makes an excellent gargle for tonsillitis"	Borax.....50% Alum.....25% Boric acid.....24%	50	03
Anti Freckle Lotion.....	E. B. Gustin, Logansport, Ind.....	"Removes freckles"	Bichloride of mercury.....1.5% Alcohol.....2% Water.....96%	50	01
Bad-Em-Sals.....	The American Laboratories, Phila, Pa.....	"A substitute for mineral water"	Salt.....13% Glauber's salt.....45% Baking soda.....26% Cream of tartar.....9%	25	02
Barbo Compound.....	Barbo Mfg. Co., Kansas City.....	"Removes dandruff and scalp humors"	Sugar of lead.....28% Sulphur.....17% Glauber's salt.....16% Salt.....15% Calcium chloride.....14% Water.....10%	50	03
Barkola Compound.....	Old Fort Chemical Co., Ft. Wayne, Ind.....	"A powerful diuretic, blood purifier and tonic."	Potassium acetate, licorice, and glycerine	50	02

Beriodols	The Berriedite Co., Chicago, Ill.	Flesh reducer. "Mild—Simple—Beneficial."	Boric acid..... 58% Sugar..... 16% Sarcosine..... 21% Water..... 6%	1 00	02
Beta-Canthol	F. W. Scharff Co., Chicago, Ill.	Hair tonic	Alcohol, resorcin, beta-naphthol, menthol and quinine.	75	07
Beta-Quinol	Cooper Pharmaceutical Co., Chicago, Ill.	"Makes the best hair grower"	Quinine, resorcin, menthol, beta-naphthol and alcohol.	50	05
Bisaturated Magnesia	International Drugists' Laboratories, New York City.	"Corrects heartburn, distress after eating, bad, sour breath."	Bismuth subcarbonate..... 6% Magnesium subcarbonate..... 62% Magnesium sulphate..... 22% Calcium carbonate..... 9%	50	05
Boro-Lator	F. W. Scharff Co., Chicago, Ill.	"Recommended for catarrh conditions; lotion in wounds and to check perspiration."	Commercial boric acid and a trace of eucalyptus.	50	02
Borothol	F. W. Scharff Co., Chicago, Ill.	Eczema remedy	Sodium thiosulphate..... 59% Borax..... 15% Water..... 26%	75	02
Brovase	The Brovase Co., Detroit, Mich.	Cleanses the hair and makes it fluffy and lustrous.	Borax..... 99%	75	05
Canthrov	H. S. Petersen and Co., Chicago, Ill.	"Gives to the hair that exquisite fluff and wavy softness that will insure a lovely growth."	Granulated soap	50	02
Capthol	F. W. Scharff Co., Chicago, Ill.	Hair tonic	Borax..... 43% Meal..... 57%	75	
Citrox	United Citrox Co., Detroit, Mich.	Eczema remedy	Entirely sodium thiosulphate	50	02
Clearola	G. W. Carpenter, Jaffrey, N. H.	"Whitens the skin"	Entirely sulphur	50	01
Coconide	Montgomery Chemical Co., Dayton, Ohio	"Coconide is remarkable for the lustrous fluffy nature that it imparts to the hair."	Borax..... 83% Soap..... 17%	25	03
Crystos	H. S. Petersen and Co., Chicago, Ill.	"Restores brilliancy and expressiveness to dull eyes."	Salt..... 27% Borax..... 30% Boric acid..... 43%	50	02
Cuticle Acid	Richard Hudnut, New York, City	"Removes dead skin"	Alcohol..... 10% Oxalic acid..... 2%	25	01

Name.	Manufacturer.	Manufacturer's Claim.	Contains.	Retail Price.	Value of Ingredients.
Dandruff-Cide.....	Ward and Co., Chicago, Ill.	"The world famous dandruff destroyer."	Entirely sal soda.....	\$1 00	\$3 03
Delatone.....	Sheffield Pharmacal Co., Chicago, Ill.	Superfluous hair remover.....	Barium sulphide..... 8% Barium sulphate..... 7% Starch..... 85%	1 00	01
De Miracle.....	De Miracle Chemical Co., New York City.	"Removes hair".....	Sodium sulphide..... 8% Water..... 92%	1 00	02
Delol.....	F. W. Scharff Co., Chicago, Ill.	"For removing superfluous hair".....	Barium sulphate..... 14% Barium sulphide..... 14% Sulphur..... 4% Calcium carbonate..... 3% Zinc oxide..... 17% Starch..... 49%	75	02
Deodorising Cream.....	H. Hatten, Chicago, Ill.	"Destroys and neutralizes the odor of perspiration."	Zinc oxide..... 49% Fatty base..... 50%	25	03
Depilatory.....	H. Hatten, Chicago, Ill.	"Will not injure the texture of the skin."	Sulphur..... 7% Barium sulphate..... 25% Barium sulphide..... 21% Calcium carbonate..... 10% Starch..... 37%	50	03
Depilatory.....	Harriett Hubbard Ayres, New York City.	"For removing hair".....	Barium sulphide..... 32% Starch..... 67%	1 00	02
Dorothy Vernon Shampoo.....	The Jennings Co., Grand Rapids, Mich.	Shampoo.....	Soap..... 78% Borax..... 22%	50	02
Egrol.....	F. W. Scharff Co., Chicago, Ill.	Shampoo.....	Soap..... 43% Borax..... 38% Potassium carbonate..... 21%	25	02
E-Lip-Tine.....	Miller Medicine Co., St. Marys, Kansas.	"For the permanent cure of epilepsy".....	Sodium and potassium bromides. 16% Alcohol..... 6% Ammonium valerate.....	1 75	10

Epp-O-Tone.....	La Cotte Mfg. Co., Chicago, Ill.	Complexion beautifier.....	Epsom salts.....80% Borax.....20%	50	02
Eptol.....	Cooper Pharmaceutical Co., Chicago, Ill.	"Whitens the skin".....	Stearic acid and soap.....75% Borax.....17% Water.....8%	50	03
El Rado.....	Pilgrim Mfg. Co., New York City.....	"The guaranteed liquid hair destroyer".....	Sodium sulphide.....5% Glycerine.....10% Water.....85%	1 00	02
E-Ru-Sa.....	Dr. L. Griffin, Los Angeles.....	"E-Ru-Sa removes piles or \$50 paid".....	Charcoal, sulphur, tannic acid and vaseline.	1 00	03
Fat-Off.....	M. S. Borden, Brooklyn, N. Y.....	"Obesity treat".....	Soft soap.....	1 50	05
Flowers of Oxoin.....	To-Kalon Mfg. Co., Syracuse, N. Y.....	"Unsurpassed for restoring a youthful appearance.".....	Zinc oxide.....22% Glycerine.....18% Water.....60%	50	03
Fluid Balmwort.....	Prescription Products Co., Dayton, Ohio.....	"Cures chronic bed wetting".....	Potassium acetate.....41% Water and extractives.....	50	02
Fluid En-Ser-Oil.....	E. C. D. Chemical Co.....	"Catarrh Cure".....	Cinnamon, camphor, water and baking soda.	1 00	02
Freckle Cream.....	Stillman Freckle Cream Co., Aurora, Ill.....	"Removes freckles".....	Ammoniated mercury.....10%	50	03
Fruitola.....	Pinus Medicine Co., Los Angeles, Cal.....	"For gall-stones and stomach trouble".....	Olive oil, sedlits powder.....	1 00	15
Glorial Balm.....	The Leslie Co., Dayton, Ohio.....	"Improves and preserves the complexion.".....	Stearic acid, soap and borax.....23.7% Water.....76.3%	25	01
Glorial Glowene.....	The Leslie Co., Dayton, Ohio.....	"Skin cleanser".....	Soft soap.....	25	02
Glorial Wavolene.....	The Leslie Co., Dayton, Ohio.....	"For curling and waving the hair".....	Camphor and g-m.....5% Potassium carbonate.....1% Alcohol.....1% Water.....99%	50	02
Grace's Mineral Salts.....	Grace Mineral Salts Co., Evansville, Ind.....	"Is the fastest blood maker in the world".....	Baking soda.....45% Salt.....38% Rochelle salt.....17%	50	05
Hall's Catarrh Cure.....	F. J. Cheney & Co., Toledo, Ohio.....	"Catarrh cure".....	Potassium iodide.....8% Alcohol.....14% Extractives.....	75	05

Name.	Manufacturer.	Manufacturer's Claim.	Contents.	Retail Price.	Value of In- gredients.
Hairwand.....	The Leslie Co., Dayton, Ohio.....	"Hair restorer".....	Salt..... 47% Borax..... 47% Sodium salicylate..... 6%	\$0 50	\$0 02
Hay's Hair Health.....	Phalto Hays Spec. Co., Newark, N. J.....	"Hair restorer".....	Sugar of lead..... 1.5% Sulphur..... 1.5% Alcohol and water.....	50	05
Heaston's Rheumatic Remedy.....	Huntington Remedy Co., Huntington, Ind.....	"Neutralizes the uric acid in the system".....	A solution of sal soda in water.....	50	02
Kulux Compound.....	Kulux Mfg. Co., Rochester, N. Y.....	"Skin food".....	Zinc oxide..... 7% Bismuth subcarbonate..... 5% Glycerine..... 10% Water..... 78%	50	04
Kargon Compound.....	Kargon Extract Co., Cincinnati, Ohio.....	"As an act of humanity, recommend this to your suffering relatives".....	Potassium acetate..... 23% Alcohol and extractives.....	50	02
Luxor.....	H. S. Petersen & Co., Chicago, Ill.....	Eczema remedy.....	Boric acid..... 60% Zinc oxide..... 25% Water..... 15%	50	02
Magnesurate Compound.....	International Druggists' and Chemists' Laboratories, Syracuse, N. Y.....	"Corrects heartburn and distress after eating".....	Sal soda..... 20% Calcium carbonate..... 30% Magnesium oxide..... 47%	50	02
Magnet.....	Magnet Remedy Co., Noblesville, Ind.....	"Nature's assistant for the blood, liver and kidneys".....	Sulphur..... 28% Potassium sulphate..... 18% Magnesium carbonate..... 18% Magnesium citrate..... 11% Magnesium Tartrate..... 7% Water..... 20%	50	02
Marmola.....	Marmola Co., Detroit, Mich.....	"Reduces a pound or more a day".....	Dried thyroid gland and phenolphthalein.....	50	02
May-O-Tone.....	May-O-Tone Co., Chicago, Ill.....	"Protection against tan, freckles and sunburn".....	Borax..... 50% Epsom salts..... 50%	50	02
Mayr's Stomach Remedy.....	Geo. H. Mayr, Chicago, Ill.....	"Removes gall-stones without operation".....	Olive oil with epsom and Rochelle salts.....	1 00	15

Mercolised Wax.....	Dearborn Supply Co., Chicago, Ill.	"Removes the complexion"	Zinc oxide..... 9%	65	05
Modene.....	Modene Mfg. Co., Cincinnati, Ohio	"For removing objectionable hair"	Ammoniated mercury..... 9%	1 00	02
Nature's Creation.....	Nature's Creation Co., Columbus, Ohio	Consumption cure.	Talc..... 65%		
Neroxin.....	Cooper Pharmaceutical Co., Chicago, Ill.	"Blackhead eradicator"	Magnesia..... 20%	\$ 00	25
Nervine.....	Nervine Co., Ft. Wayne, Ind.	"Recommended for nervousness and epilepsy."	Calcium sulphide..... 9%	50	03
Odor-O-No.....	Odor-O-No Co., Cincinnati, Ohio	"Prevents excessive perspiration"	Potassium iodide..... 6%	50	04
Olive Tablets.....	Olive Tablet Drug Co., Columbus, Ohio	"A substitute for calomel"	Borax..... 55%		
On-Riah.....	On-Riah Co., Cincinnati, Ohio	Hair remover.	Soap..... 25%	50	02
Orrine.....	The Orrine Co., Washington, D. C.	"A reliable remedy for the treatment of the liquor habit."	Camphor, glycerine and valerian.....	10	.005
Othine.....	Othine Laboratory, Buffalo, N. Y.	"Removes freckles"	Aluminum chloride..... 20%	50	03
Parnotis.....	H. S. Petersen & Co., Chicago, Ill.	"Makes you weigh just what you want to."	Rosercin..... trace	50	
Partina.....	R. Partina Co., Boston, Mass.		Talc..... 45%	1 00	03
Penetrol Concentrated.....	Acoline Chemical Co., Pittsburg, Pa.		Barium sulphide..... 17%		
Perspi-No.....	Perspi Co., Chicago, Ill.	"For sprains"	Starch..... 40%		
Perspire.....	H. Hatten, Chicago, Ill.	"Stops excessive perspiration, also destroys odor."	Sugar..... 85%	1 00	06
			Ammonium chloride..... 17%		
			Gold chloride..... trace	1 00	01
			Ammoniated mercury..... 25%	50	03
			Baking soda..... 75%		
			Glauber's salt..... 21%	50	06
			Borax..... 60%		
			Water..... 40%	25	02
			Half strength tincture of iodine.....		
			Boric acid..... 20%		
			Salicylic acid..... 25%		
			Talc..... 45%		
			Calcium carbonate..... 10%	25	02
			Borax..... 18%		
			Talc..... 65%		
			Zinc oxide..... 4%		
			Water.....		
Pinus.....	Pinus Medicine Co., Los Angeles, Cal.	"For rheumatism and neuralgia"	Turpentine..... 85%	2 50	05
			Magnesia..... 15%		

Name.	Manufacturer.	Manufacturer's Claim.	Contains.	Retail Price.	Value of In- gredients.
Plain Yellow Minylol	Prescription Products Co., Dayton, Ohio.	"Promotes a healthy, vigorous growth of hair, cures dandruff, itching scalp and hair."	Salt..... 75% Water..... 25% Fat..... 3%	\$0 90	\$0 02
Potowite.	The Potowite Co., Canton, Ohio	"The condensed mineral water"	Baking soda..... 12% Glauber's salt..... 49% Potassium sulphate..... 12% Water..... 27% Lithium..... trace.	35	02
Proxin	Sheffield Pharmaceutical Co., Chicago, Ill.	"Makes eyebrows long and silky"	Vaseline perfumed with oil of bergamot.	1 00	02
Quintone	The Quin-Tone Co., Detroit, Mich.	"For treatment of the scalp"	Sodium thioisulphate..... 80% Borax..... 20%	75	02
Quinzoin	H. S. Petersen and Co., Chicago, Ill.	"Corrects profuse dandruff, excess oiliness and other defects."	Baking soda..... 37% Quassia bark..... 60% Quinine..... trace.	50	03
Rumo-Sac	The Rumo-Sac Co., Toledo, Ohio.	"Rumo-Sac will absolutely kill your rheumatism."	Entirely powdered alum.	1 00	01
Rheumatic Tablets	Nowell Remedy Co., Indianapolis, Ind.	For rheumatism	Salt..... 20% Sal ammoniac..... 80%	50	01
Rheuma Vita	Haumer Chemical Co.	"For rheumatism and neuralgia"	Salicylic acid..... 85%	50	02
Roe-Kayloin	The Blackburn Products Co., Dayton, Ohio.	"It eliminates skin troubles, soothes the itching and heals the sores."	Sulphur..... 80% Potassium carbonate..... 15%	50	01
Sarene	Cooper Pharmaceutical Co., Chicago, Ill.	"A blood remedy"	Extracts of senna, sarsaparilla, etc.	50	03
Sartoin	Globe Pharmaceutical Co., Chicago, Ill.	"Beautifies the complexion"	Epsom salts..... 45% Boric acid..... 1% Water..... 43%	50	02
Saxolite	Dearborn Supply Co., Chicago, Ill.	"Wrinkles and sagging are corrected and the face feels so refreshed and snug-like."	Epsom salts..... 44% Alum..... 56%	65	01
Sayleen	Sayleen Mineral Co., Indianapolis, Ind.		Common salt	25	005
Spurmax	H. S. Petersen and Co., Chicago, Ill.	"No fear of tan or freckles if applied daily."	Entirely Epsom salts.	50	02

Sulpho-Solution.....	Cooper Pharmaceutical Co., Chicago, Ill.	"Superfluous hair remover"	Sodium sulphide..... 9% Water..... 91%	1 00	01
Sweeto-Powder.....	The Standard Chemical Co., Chicago, Ill.	"Prevents excessive perspiration and instantly destroys objectionable odors."	Zinc oxide..... 32% Starch..... 45% Talc..... 21%	25	03
Thargol Compound.....	Indiana Pharmaceutical Co., Ft. Wayne, Ind.	"For diseases of the nervous system"	Strontium bromide..... 18% Calcium bromide..... 4% Coumarin and vanillin.....	50	03
Therox.....	American Therox Co., Windsor, Ont.	Dry shampoo	Entirely borax.....	75	05
Thomine.....	Michigan Thomine Co., Detroit, Mich.	"For the treatment of the skin"	Boric acid..... 8% Epsom salts..... 45% Water..... 45%	75	03
Tincture Cadomene.....	Prescription Products Co., Dayton, Ohio	"Gives increased weight, pink cheeks and restores ambition."	Damiana, cinchona and phosphorus.....	60	04
Toris Compound.....	Globe Pharmaceutical Co., Chicago, Ill.	"Rheumatism eradicator and system builder."	Sugar..... 67% Sodium salicylate..... 9% Saltpeter..... 22%	50	02
Traxo.....	Pinus Medicine Co., Los Angeles, Cal.	"For the liver, kidneys and skin"	Taraxacum and cascara.....	1 00	15
Tyree's Compound Antiseptic Powder.....	J. S. Tyree.....	"For catarrhal and infected conditions of the mucous membrane."	Zinc sulphate..... 27% Boric acid..... 70%	25	02
Varlex.....	Varlex Mfg. Co., Kansas City, Mo.	"For making a liquor and tobacco habit remedy."	Milk sugar..... 99.5%	50	01
Vilane Powder.....	Blackburn Products Co., Dayton, Ohio.	"Catarrh cure"	Salt..... 42% Baking soda..... 33% Borax..... 14% Sodium salicylate..... 11%	50	02
Wrinkle Lotion.....	Sarah Thompson, Terre Haute, Ind.	"Removes wrinkles"	Alum..... 7% Glycerine..... 20% Water..... 64%	50	03
Zero Powder.....	Miami Valley Chemical Co., Dayton, Ohio	"For excessive perspiration"	Borax..... 27% Zinc oxide..... 13% Calcium carbonate..... 15% Talc..... 35%	25	02
Zintone.....	Cooper Pharmaceutical Co., Chicago, Ill.	"Makes any skin bloom out in the most aseptic tint and purity."	Four-fifths stearic acid and soap, one fifth borax.....	50	03



## ASPIRIN TABLETS.

Although rumors of the sophistication of aspirin tablets with free salicylic acid and salicylates have come to this department, we have never found them to be true. Eighteen samples were analyzed, thirteen of which were passed as legal. The five illegal ones were so classed because they contained less than 90 per cent. of the amount of aspirin claimed.

## ASPIRIN TABLETS.

Laboratory No.	Manufacturer or Retailer.	Grains Aspirin in Each Tablet.		Remarks.
		Label.	Contains.	
25438	Pioneer Drug Co., Fairmount.....	5	5.023	Legal.
25711	H. C. Cook, Mulberry.....	5	4.022	Illegal.
25730	W. J. Runyan, Crawfordsville.....	5	5.004	Legal.
26152	J. V. Riesbeck, Indianapolis.....	5	4.329	Illegal.
26155	Abbotts Pharmacy, Indianapolis.....	5	4.329	Illegal.
26160	C. A. Eitel, Indianapolis.....	5	5.036	Legal.
26167	J. H. & J. E. Stuckemeyer, Indianapolis.....	5	5.096	Legal.
26171	L. C. Wiess, Indianapolis.....	5	4.511	Legal.
26172	L. Haag, Indianapolis.....	5	4.201	Illegal.
26175	C. A. Jones, Indianapolis.....	5	4.537	Legal.
26179	W. J. Merrill, Indianapolis.....	5	4.876	Legal.
26184	Waddel & Walterhouse, Indianapolis.....	5	4.790	Legal.
26187	B. Keene, Indianapolis.....	5	4.753	Legal.
26189	George Weber, Indianapolis.....	5	4.705	Legal.
26192	R. Francis, Indianapolis.....	5	4.940	Legal.
26195	W. H. Burget, Indianapolis.....	5	4.608	Legal.
26200	J. W. Hook, Indianapolis.....	5	4.498	Illegal.
27769	Sent in from Elkhart.....	5	4.86	Legal.

## LINSEED OIL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Saponification Number.	Hexabromides.	Remarks.
26222	J. Q. Swanger, Jr.....	Mishawaka.....	190.4	41.2	Legal.
26829	F. L. Bodkin.....	Muncie.....			Legal.
26863	Singer Mfg. Co.....	South Bend.....	185.2	38.8	Legal.
26970	Eckerty & Son.....	Eckerty.....	126.8	21.9	Illegal.
26971	Eckerty & Son.....	Eckerty.....	188.1	36.2	Legal.
27069	Indianapolis Paint & Color Co.....	Indianapolis.....	193.1	28.4	Legal.
27504	Indianapolis Paint & Color Co.....	Indianapolis.....	190.4	40.4	Legal.
27505	Indianapolis Paint & Color Co.....	Indianapolis.....	189.9	38.3	Legal.
27506	Indianapolis Paint & Color Co.....	Indianapolis.....	190.9	38.2	Legal.
27570	August Buschman & Son.....	Indianapolis.....	189.5	41.3	Legal.
27571	August Buschman & Son.....	Indianapolis.....	189.5	32.7	Legal.
27572	Sent in from.....	Veederburg.....	189.5	38.7	Legal.
27584	J. H. Campbell.....	Sheridan.....	191.4	27.0	Legal.
27693	Jess LeBrun.....	Gas City.....	18.95	32.3	Legal.
27697	J. H. Weaver.....	Marion.....	196.8	48.1	Legal.
28287	Moore Oil Co.....	Logansport.....	195.7	45.6	Legal.
28289	E. M. Schnaible.....	Lafayette.....	61.8	51.8	Legal.
28290	Brown Drug Co.....	Lafayette.....	194.0	49.2	Legal.
28291	Brown Drug Co.....	Lafayette.....	197.7	44.3	Legal.
28292	Midland Linseed Oil Co.....	Indianapolis.....	194.8	47.6	Legal.
28293	A. W. Spencer.....	Waveland.....	193.9	35.0	Legal.

## LIQUEFIED PHENOL.

Of the twenty-three samples of liquefied phenol examined, eleven, or fifty-two per cent., were below the U. S. P. standard of eighty-six per cent. However, the great majority of these illegal samples were only slightly below the standard and were apparently manufactured too hastily.

## LIQUEFIED PHENOL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of Phenol.	Remarks.
26151	J. V. Riesbeck, Indianapolis	87.6	Legal.
26157	Abbott Pharmacy, Indianapolis	85.3	Illegal.
26162	C. A. Eitel, Indianapolis	80.0	Illegal.
26164	J. H. & J. E. Stuckemeyer, Indianapolis	81.9	Illegal.
26168	L. C. Wiess, Indianapolis	64.2	Illegal.
26174	L. Haag, Indianapolis	85.7	Illegal.
26176	C. A. Jones, Indianapolis	89.2	Legal.
26181	W. D. Merrill, Indianapolis	81.2	Illegal.
26183	C. R. Spencer, Indianapolis	86.9	Legal.
26186	B. Keene, Indianapolis	80.0	Illegal.
26190	George Weber, Indianapolis	89.9	Legal.
26194	R. Francis, Indianapolis	83.0	Illegal.
26197	W. H. Burgert, Indianapolis	85.0	Illegal.
26199	J. M. Hook, Indianapolis	76.1	Illegal.
26306	Magee Pharmacy, Greensburg	92.6	Legal.
26307	Joe Moss, Greensburg	90.0	Legal.
26308	E. Hargott, Greensburg	88.4	Legal.
26309	Henry & Co., Greensburg	92.0	Legal.
26310	J. Batterton & Son, Greensburg	87.0	Legal.
26311	St. John & Guthrie, Greensburg	89.8	Legal.
26317	H. L. Cullum, North Vernon	79.0	Illegal.
26319	Carter & O'Haver, North Vernon	87.4	Legal.
26321	D. Davis, North Vernon	90.6	Legal.

## OLIVE OIL.

Laboratory No.	Manufacturer or Retailer.	Halphen's Test.	Saponification Number.	Remarks.
26626	Hommer Closson Co., Logansport	Negative	196	Abbe at 25° 1.4673.
27044	Thomas Banette, Anderson	Negative		Butyro at 40° 50.7.
27844	Mendenhall & Ortman, Brazil	Negative	186.6	
28376	A. W. Trittipo, Fishers	Negative		Butyro at 40° 51.0.
28987	Sent in from Columbus	Negative	193.6	

## PAREGORIC.

It is most important that paregoric be carefully manufactured because of its widespread use by the public without a physician's supervision. The common tendency of the pharmacist in this preparation is to be liberal in the addition of the opium, while it is the popular belief concerning medicines that if a little does some good more will do greater. A combination of these circumstances

might result disastrously, but the following analyses demonstrate that Indiana druggists exercise considerable care in the compounding of paregoric:

## PAREGORIC.

Laboratory No.	Manufacturer or Retailer.	Morphine in 100 cc.	Per Cent. U. S. P. Strength.	Remarks.
25547	H. Ewing, Indianapolis.....			Labelled correctly. Legal.
26175	C. A. Jones, Indianapolis.....	.0515	103.02	Legal.
26180	W. J. Merrill, Indianapolis.....	.0672	134.4	Legal.
26182	C. R. Spencer, Indianapolis.....	.0540	108.0	Legal.
26185	Waddell & Walterhouse, Indianapolis.....	.0528	105.6	Legal.
26188	B. Keena, Indianapolis.....	.0564	112.0	Legal.
26191	George Weber, Indianapolis.....	.0552	110.4	Legal.
26193	R. Francis, Indianapolis.....	.0504	100.8	Legal.
26196	J. M. Hook, Indianapolis.....	.0504	100.8	Legal.
26208	Hook Drug Co., Indianapolis.....	.0510	102.0	Legal.

## PEROXIDE OF HYDROGEN.

Laboratory No.	Manufacturer or Retailer.	Acidity.	Solids Grams. Per 20cc.	Per Cent. H <sub>2</sub> O <sub>2</sub> .	Acetanilid.	Amount.	Price.
26133	Haag Drug Co., Indianapolis.....	2.8	.0192	2.63	Present.	8 os.	\$0.15
26134	Krege Company, Indianapolis.....	3.2	.0175	1.98	Present.	16 os.	.10
26135	Haag Drug Co., Indianapolis.....	2.8	.0067	3.55	Present.	5½ os.	.19
26136	Hooks Drug Co., Indianapolis.....	2.9	.0144	3.56	Present.	16 os.	.29
26137	American 5 and 10ct. Co., Indianapolis..	3.1	.0180	2.78	Present.	8 os.	10
26138	Weber Drug Co., Indianapolis.....	2.5	.0115	2.92	Present.	8 os.	25
26139	Hook Drug Co., Indianapolis.....	3.2	.0320	2.68	Present.	16 os.	19
26140	American 5 and 10ct. Co., Indianapolis..	3.3	.0225	2.38	Present.	8 os.	10
26141	W. H. Woolworth Co., Indianapolis.....	3.7	.0209	2.71	Present.	8 os.	10

## SPIRITS OF CAMPHOR.

Laboratory No.	Manufacturer or Retailer.	Specific Gravity.	Per Cent. U. S. P.	Per Cent. Alcohol.	Remarks.
26078	James Porter, Peru.....	.8307	107.5	78.00	Legal.
26155	J. P. Lamb, Indianapolis.....	.8690	110.8	69.26	Legal.
26159	Abbotts Pharmacy, Indianapolis.....	.8272	103.3	83.42	Legal.
26163	C. A. Eitel, Indianapolis.....	.8292	109.1	82.43	Legal.
26173	L. Haag, Indianapolis.....	.8294	106.7	82.58	Legal.
26177	C. A. Jones, Indianapolis.....	.8284	105.0	82.93	Legal.
26594	Harry C. Trigg, Logansport.....		101.9	75.19	Legal.
27159	G. Heavenridge, Muncie.....		105.9	92.95	Legal.
28322	D. Davis, North Vernon.....	.8275	99.0	83.62	Legal.
26154	J. V. Riesbeck, Indianapolis.....	.8239	83.3	85.78	Illegal.
26185	J. H. & J. E. Stuckemeyer, Indianapolis.....	.8241	81.7	85.77	Illegal.
26169	L. C. Wiess, Indianapolis.....	.8286	107.5	82.70	Illegal.
26583	Fred C. Langfret, Logansport.....		68.3	73.1	Illegal.
26674	H. Clomon Co., Logansport.....		85.0	73.47	Illegal.
26864	C. W. Butler, Petersburg.....	.894	40.0	63.87	Illegal.
27065	Wesley McDowell, Princeton.....				Illegal.
28318	H. L. Culhum, North Vernon.....		80.4	85.92	Illegal.
28320	Carter & O'Haver, North Vernon.....		83.7	85.44	Illegal.

## TINCTURE OF IODINE.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of U. S. P.	Potassium Iodide Grams, Per 100 cc.	Remarks.
26047	Henry Huder, Indianapolis	104.6	4.753	Legal.
26153	Abbotts Pharmacy, Indianapolis	76.07	3.777	Illegal.
26161	C. A. Eitel, Indianapolis	101.83	3.682	Illegal. Low in potassium iodide.
26166	J. H. and J. E. Stuckemeyer, Indianapolis	91.74	4.192	Illegal.
26170	L. C. Wiess, Indianapolis	104.84	4.329	Misbranded. Alcohol not stated.
26959	Sent in from Marion	59.8	1.56	Illegal.
27053	Wesley McDowell, Princeton			Misbranded. Alcohol not stated.
27535	Sent in from Marion	101.1		Legal.

## TURPENTINE.

Laboratory No.	Manufacturer or Retailer.	Boiling Point.	Mineral Oil.	Remarks.
27113	C. C. Went, Mishawaka	160	Present.	Illegal.
27164	Sent in from Muncie	145	Absent.	Not sold for medicinal purposes.
27290	Indianapolis Paint & Color Co., Indpls.	152	Absent.	Not sold for medicinal purposes.
27291	Indianapolis Paint & Color Co., Indpls.	150	Absent.	Not sold for medicinal purposes.
27529	Binkley Medicinal Co., Nappanee	157.5	Absent.	Legal.

## TOILET PREPARATIONS.

Laboratory No.	Article.	Manufacturer or Retailer.	Remarks.
26077	Perspire	M. M. Yale, New York	Borax, talc and zinc oxide.
26130	Fluor Powder	Leslie Co., Dayton, Ohio	Talc, starch, sodium sulphide.
26134	Eggol Powder	F. W. Scharff Co., Chicago, Ill.	Soap, borax, sal soda.
26145	Flowers of Oxoin	E. Virgil Neal, Syracuse, N. Y.	Glycerine, zinc oxide, water.
26258	Face Powder	Henry Tetlow	Talc and zinc oxide.
26276	Hair Tonic	Sent in from Indianapolis	Salt solution.
26419	Danderine	Danderine Co., Chicago, Ill.	Salicylic acid, glycerine, capicum and water.
26430	El-Rado	Pilgrim Mfg. Co., New York	Sodium sulphide, glycerine and water.
26431	Hair Tonic	Sent in from Indianapolis	Alcohol, water, capicum.
26433	Hair color restorer	M. E. Phelan, Indianapolis	Silver nitrate, water and ammonia.
26451	Hair Tonic	Sent in from Noblesville	Salicylic acid, resorcin, alcohol and water.
26866	Kink-No-More	Sent in from Indianapolis	Soap and lye.
26883	Brovone	Brovone Co., Detroit, Mich.	Borax.
26884	Zearo Powder	Miami Valley Chemical Co., Dayton, O.	Talc, chalk, zinc oxide.
26882	Depilatory	H. Hatten, Chicago, Ill.	Sulphur, starch, barium sulphide.
26885	Coonide	Montgomery Chemical Co., Dayton, O.	Borax and soap.
26889	Amoline	Amoline Chemical Co., New York	Boracic acid and thymol.
26952	Quin-Tone	Quin-Tone Co., Detroit, Mich.	Borax, sodium thiosulphate.
26892	Sweeto Powder	Standard Chemical Co., Chicago, Ill.	Zinc oxide, starch, talc.
26945	Anazyme	Maltbie Chemical Co., Newark, N. J.	Alum, borax, boric acid.
26980	On-Riah	On-Riah Co., Cincinnati, Ohio	Talc, starch, barium sulphide.
26981	Deodorizing Cream	J. Hatten, Chicago, Ill.	Zinc oxide, fatty base.
26954	Thomine	Thomine Co., Detroit, Mich.	Epsom salt, boric acid.
26955	Modene	Modene Mfg. Co., Cincinnati, Ohio	Talc, magnesia, calcium sulphide.
26984	Hair Remover	De Miracle Co., New York	Sodium sulphide, water.
26986	Depilatory	H. H. Ayres, New York	Barium sulphide, starch.
27078	Hair Help	Sent in from Noblesville	Sulphur, sugar of lead.
27840	Freckle Cream	Stillman Freckle Cream Co., Aurora, Ill.	Ammoniated mercury, bismuth subnitrate.

## MISCELLANEOUS DRUG ANALYSES.

Labo- ratory No.	Article.	Manufacturer or Retailer.	Remarks.
26072	Bees Wax	C. M. Scott, Indianapolis	Melting point 82°. Legal.
26073	Rye	Sent in from Perryville	Coated with calcium carbonate.
26077	Sugar	Sent in from Indianapolis	Quinine present.
26115	Codein Tablets	Sent in from Lagrange	1-5 grain per tablet. Legal.
26224	Sauer Kraut	Sent in from Shelbyville	No poison detected.
26256	Unknown Liquid	Sent in from Ainsworth	Decolorised tincture of iodine.
26287	Cold Storine	B. Heller & Co., Chicago	Common salt.
26399	Wall Paper	Sent in from Berne	No arsenic present.
26300	Chili	Sent in from Tipton	No poisons detected.
26386	Medicine	Sent in from Trevas	Metallic phosphorus present.
26394	Oyster Cocktail	Sent in from Logansport	No poisons detected.
26503	Chicken Feed	Sent in from Memphis	Arsenic present.
26552	Kerosene	Sent in from Logansport	Flash point 132° F.
26562	Salad	Sent in from Richmond	No poison detected.
26567	Snuff	Sent in from Logansport	No narcotics present.
26570	Catarth Powder	Sent in from Plainville	Entirely boric acid.
26598	Herb Tea	Sent in from Muncie	Buchu and juniper.
26624	Witch Hazel	Sent in from Logansport	Methyl alcohol absent.
26627	Tincture Arnica	Sent in from Logansport	Solids 4.418%. Legal.
26772	Tincture Ginger	Sent in from Rensselaer	Solids 1.120%. Legal.
26773	Ar. Spirite Ammonia	Sent in from Rensselaer	Complies with U. S. P.
26774	Syrup Squill	Sent in from Rensselaer	Complies with U. S. P.
26775	Unknown Powder	Sent in from Emison	Ordinary clay.
26783	Preserving Powder	Sent in from South Bend	Salt, saltpeter and sugar.
26820	Bran	Sent in from Logansport	No poisons detected.
26830	Cottonseed Meal	Sent in from Muncie	No poisons detected.
26833	Washing Powder	Sent in from Ft. Wayne	Paraffin and borax.
26852	Urine	Sent in from Indianapolis	Sugar 2.3%.
26867	Hand Cleanser	Sent in from Indianapolis	Soap and ammonia.
26873	Urine	Sent in from Indianapolis	Sugar 3.4%.
26994	Preserving Powder	Sent in from Hortonville	Entirely borax.
26995	Urine	Sent in from Indianapolis	Sugar 3.2%.
27034	Codein Tablets	Sent in from Ossian	1-5 grain per tablet.
27073	Unknown Powder	Sent in from Logansport	Cerium oxalate.
27074	Prescription	Sent in from Plymouth	Ammonium chloride solution.
27084	Stomach	Sent in from Tipton	No morphine detected.
27095	Urine	Sent in from Indianapolis	Sugar 4.9%.
27152	Jamaica Ginger	Sent in from Richmond	Capiscum present.
27156	Unknown Liquid	Sent in from Michigan City	No poison detected. Illegal.
27158	Salt	Sent in from Kendallville	Legal.
27161	Grass	Sent in from Cicero	No poison detected.
27168	Cough Cure	Sent in from Muncie	Legal.
27175	Peppermint Flavor	Sent in from Richmond	Properly labelled.
27296	Trional	Sent in from Noblesville	Zinc salt present.
27304	Biscuits	Sent in from New Harmony	No poison detected.
27305	Flour	Sent in from New Harmony	No poison detected.
27306	Baking Soda	Sent in from New Harmony	No poison detected.
27348	Unknown Powder	Sent in from New Amsterdam	Salt peter.
27407	Unknown Powder	Sent in from Cannellton	Paris green and arsenic.
27410	Unknown Powder	Sent in from Kennard	Boric acid.
27508	Unknown Powder	Sent in from Indianapolis	Common lye.
27531	Carpet	Sent in from Mt. Vernon	Trace of arsenic.
27626	Deodorant	Sent in from South Bend	Potassium permanganate, borax and sal soda.
27690	Rye	Sent in from Shipshewanna	No poison detected.
27692	Unknown Solution	Sent in from Bluffton	Hydrastis present.
27767	Strychnine Tablets	Sent in from Elkhart	1-30 grain present.
27768	Quinine Tablets	Sent in from Elkhart	1.8 grains present.
27839	Lard Oil	Sent in from Madison	Largely mineral oil.
27841	Salt	Sent in from Shirley	No poisons detected.
27842	Prescription	Sent in from Muncie	Properly compounded.
27843	Unknown Liquid	Sent in from Bainbridge	Sour wine.
28003	Lettuce	Sent in from Lafayette	No poisons detected.
28120	Unknown Tablet	Sent in from Kennard	Corrosive sublimate present.
28121	Paint	Sent in from Columbus	Barium sulphate present.
28129	Unknown Powder	Sent in from Indianapolis	Morphine sulphate.
28130	Unknown Powder	Sent in from Indianapolis	Quinine and acetanilid.
28131	Unknown Powder	Sent in from Indianapolis	Morphine sulphate.
28297	Iodoform	Sent in from Heltonville	Contains yellow coloring.
28364	Caster Oil	Sent in from Noblesville	Not U. S. P.
28371	Neatsfoot Oil	Sent in from Madison	Legal.
28373	Cream of Tartar	Sent in from Indianapolis	Legal.
28363	Middlings	Sent in from Corydon	No poison detected.
28364	Sugar	Sent in from Tangier	Alum present.
28368	Goitre Cure	Sent in from Lagrange	Potassium iodide.

## MISCELLANEOUS DRUG ANALYSES—Continued.

Laboratory No.	Article.	Manufacturer or Retailer.	Remarks.
28972	Sage Leaves.....	Sent in from Logansport.....	Nothing foreign detected.
28973	Sugar.....	Sent in from Richmond.....	No poison detected.
28986	Chicken.....	Sent in from Morristown.....	No poison detected.
28986	Unknown Tablet.....	Sent in from South Bend.....	Aloes present.
29023	Silver Nitrate.....	Sent in from Marion.....	Complies with U. S. P.
29052	Unknown Substance.....	Sent in from Indianapolis.....	Gum opium.
29062	Unknown Solution.....	Sent in from Fort Wayne.....	Cocain and morphine absent.
29155	Cigars.....	Sent in from Auburn.....	No poison detected.
29156	Tonic.....	Sent in from Auburn.....	No poison detected.

## PROSECUTIONS.

Our faith in the efficacy of police court methods of work is not what it once was. Every law must have its penalty and that penalty must be promptly applied whenever wilful intent to deceive is manifest. With the development of food and drug control and its ever changing character, the necessity for constant attendance at court is past, and each year finds fewer violators of law brought before the bar.

During the year just past but 66 cases were filed for violation of the Pure Food and Drug Law, and Sanitary Food Law. In every case the defendant was found guilty and fined, usually the minimum of ten dollars and costs. Eight cases were brought because of the sale of dirty milk and cream; four because of milk containing added water, and four for the sale of milk and cream deficient in butter fat. One ice cream manufacturer was fined for selling sub-standard ice cream. Two cases were brought because of the sale of goods containing benzoate of soda and one case because of the sale of grape juice preserved with sulphites. Still another case successfully alleged the sale of soda pop containing salicylic acid. Eleven cases were filed and successfully prosecuted for the maintenance of unsanitary conditions. Seven cases dealt with the exposure of foods to dust and dirt. In fifteen cases the defendant was charged with and convicted of misbranding his products, soft drinks, vinegar, drugs and miscellaneous food stuffs. Two cases were filed because of the sale of rotten eggs and one because of falsely advertising a hair dye as a hair restorer. One grocer was fined for selling potatoes which did not weigh the required sixty pounds to the bushel.

## PROSECUTIONS.

*Table Showing Character and Number of Cases.*

<i>Character.</i>	<i>Number.</i>
Dirty milk and cream .....	8
Milk containing added water.....	4
Milk and cream below standard.....	4
Exposed foods .....	7
Maintaining unsanitary conditions.....	11
Ice cream below standard .....	1
Misbranding soft drinks .....	2
Misbranding beverage .....	7
Cider containing benzoate of soda.....	1
Benzoate in catsup .....	1
Short weight potatoes .....	1
Adulterated food .....	1
Adulterated lard .....	1
Adulterated butter .....	1
Rotten eggs .....	2
False advertising .....	1
Grape juice containing sulphites .....	1
Misbranded food stuffs .....	3
Misbranded drugs .....	2
Drugs below standard .....	3
Cereal in weiner sausage .....	1
Starch in sausage .....	1
Salicylic acid in pop and soda .....	1
Misbranded vinegar .....	1
Total .....	66

## PROSECUTIONS FROM OCTOBER 1, 1913, TO SEPTEMBER 30, 1914.

COUNTY.	Labo- ratory Number.	Names and Addresses of Defendants.	Why Prosecuted.	Date of Trial.	Final Disposition.
Allen.	7771D	Wm. A. Fuhrmann, Ft. Wayne.	Adulterated foods, benzene of soda in catsup.	3-11-14	Fined \$20.00.
Allen.		Carl Stennel, Ft. Wayne.	Dirty milk.	3-13-14	Fined \$20.00.
Allen.		Oscar Adler, Ft. Wayne.	Selling milk that contained visible dirt.	3-13-14	Fined \$20.00.
Cass.	7213D	Fred C. Langfret, Logansport.	Misbranding of camphor.	1-26-14	Fined \$20.00.
Clark.		Edward Clappart, Utica.	Unsanitary dairy.	11-12-13	Fined \$18.80.
Clark.		Herman Basel, Agent Armour & Co., Jeffersonville.	Hauling meat unprotected with clean cloth.	12-12-13	Fined \$19.50.
Clark.		James A. Walker, Jeffersonville.	Selling misbranded beer.	9- 3-14	Fined \$27.50.
Delaware.		Jasper Scott, Muncie.	Selling potatoes, short weight.	4-22-14	Fined \$20.00.
Delaware.		James D. Castron, Muncie.	Selling milk below the standard.	9- 4-14	Fined \$20.00.
Floyd.		John Straw, New Albany.	Selling dirty milk.	12-11-13	Fined \$18.80.
Floyd.		John Smith, New Albany.	Selling sweet cider with benzene of soda.	1- 7-14	Fined \$18.80.
Floyd.		P. J. Pfeiffer, New Albany.	Selling cream below the standard.	7-28-14	Fined \$18.80.
Floyd.		Fred Spieth, New Albany.	Selling watered milk, 30% water.	7-17-14	Fined \$18.80.
Floyd.		Fred Zurehmede, New Albany.	Selling watered milk, 15% water.	7-17-14	Fined \$18.80.
Gibson.		Wesley McDowell, Princeton.	Selling misbranded tincture of iodine.	4- 9-14	Fined \$19.50.
Gibson.		Wesley McDowell, Princeton.	Selling misbranded spirits of camphor.	4- 9-14	Fined \$19.50.
Gibson.		Allen Hitch, Princeton.	Selling adulterated food.	7-23-14	Fined \$25.00.
Gibson.		Allen Hitch, Princeton.	Selling adulterated lard.	7-23-14	Fined \$25.00.
Gibson.		Clint Woods, Princeton.	Selling ice cream below standard.	8-14-14	Fined \$20.00.
Gibson.		Ed. J. Wirth, Princeton.	Selling milk below standard.	8-14-14	Fined \$20.00.
Gibson.		Rudolph Williams, Princeton.	Misbranding vinegar.	8-14-14	Fined \$20.00.
Grant.		A. M. Waymire, Marion.	Selling milk to which water had been added.	1-20-14	Fined \$20.00.
Hamilton.		E. H. Day, Nobleville.	Dirty milk.	1-24-14	Fined \$20.00.
Henry.	6022-E	Wm. Gorman, New Castle.	Selling dirty milk.	12-10-13	Fined \$18.55.
Jackson.		Dora Kenworthy, Seymour.	Selling adulterated butter.	1-13-14	Fined \$44.20.



## PROSECUTIONS FROM OCTOBER 1, 1913, TO SEPTEMBER 30, 1914.

Country.	Laboratory Number.	Names and Addresses of Defendants.	Why Prosecuted.	Date of Trial.	Final Disposition.
Late.		Frank Wozniak, Indiana Harbor.	Conducting store in unsanitary manner.	1-16-14	Fined \$24.80.
Late.		James Marvelli, Indiana Harbor.	Selling unprotected foodstuffs.	1-16-14	Fined \$24.80.
Late.		Leo Orzechowski, Indiana Harbor.	Conducting store in unsanitary manner.	1-16-14	Fined \$24.80.
Late.		Michael Chaswood, Indiana Harbor.	Selling foodstuff not properly protected.	0-11-14	Fined \$25.90.
Late.		Eckman and Shierler, Indiana Harbor.	Maintaining an unsanitary bakeshop.	0-11-14	Fined \$25.90.
Late.		Frank Fredelivriez, Indiana Harbor.	Selling not properly covered and maintaining an unsanitary meat market.	0-11-14	Fined \$25.90.
Late.		Miscei Rodupski, Indiana Harbor.	Maintaining an unsanitary bakeshop.	0-11-14	Fined \$25.90.
Late.		Samuel Meyers, Indiana Harbor.	Selling foodstuff not properly protected.	0-11-14	Fined \$25.90.
Late.		Ale Radie, Indiana Harbor.	Maintaining an unsanitary grocery and meat market.	0-11-14	Fined \$25.90.
Late.		Sanitary bottle works, Indiana Harbor.	Selling ginger ale containing benzoate and saccharin.	0-11-14	Fined \$22.10.
Late.		Sanitary bottle works, Indiana Harbor.	Selling red pop containing benzoate and saccharin.	0-11-14	Fined \$22.10.
Late.		Sanitary bottle works, Indiana Harbor.	Selling orange cider containing benzoate and saccharin.	0-11-14	Fined \$22.10.
Late.		Sanitary bottle works, Indiana Harbor.	Selling iron force containing benzoate and saccharin.	0-11-14	Fined \$22.10.
Late.		Sanitary bottle works, Indiana Harbor.	Selling root beer containing benzoate and saccharin.	0-11-14	Fined \$22.10.
Late.		Fred Spasek, Indiana Harbor.	Maintaining an unsanitary bakeshop.	0-11-14	Fined \$25.90.
Late.		Samuel Wolfer, Indiana Harbor.	Maintaining an unsanitary bakeshop.	0-11-14	Fined \$25.90.
Madison.		Peter Downas, Elwood.	Unsanitary slaughterhouse.	2-22-14	Fined \$20.00.
Madison.		Erman Hawkins, Anderson.	Selling rotten eggs.	3- 4-14	Fined \$20.40.
Marion.		Miss M. E. Phelan, Indianapolis.	False advertising.	1-12-14	Fined \$20.00.
Marion.	7135-G	Ben Friberg, Indianapolis.	Selling grape juice containing sulphites.	1-16-14	Fined \$10.00.
Marion.		Morris Burns, Indianapolis.	Selling misbranded pop.	9- 7-14	Fined \$20.00.
Marion.		Guy Mascari, Broad Ripple.	Exposing foodstuffs at State Fair.	9-20-14	Fined \$20.00.
Morgan.		John Landrum, Martinsville.	Exposed foods (candy).	12-22-13	Fined \$19.00.
Morgan.		Hill & Soddler, Martinsville.	Exposed foods (candy).	12-22-13	Fined \$19.00.
Morgan.		Nichols Cargill, Martinsville.	Exposed foods (candy).	12-22-13	Fined \$19.00.
Monroe.		George Politian, Bloomington.	Selling ice cream below standard.	7-24-14	Fined \$35.00.
St. Joseph.		Mrs. Ralph Beal, Walkerton.	Selling bad eggs.	11-14-13	Fined \$18.00.
Spencer.		Fred Fieger, Rockport.	Selling misbranded foodstuffs.	4- 2-14	Fined \$17.50.
Spencer.		Charles Simpson, Rockport.	Selling misbranded drugs.	4-16-14	Fined \$18.25.
Spencer.		Charles Simpson, Rockport.	Selling misbranded food.	4-16-14	Fined \$18.25.

Sullivan.....	John V. Barre, Farmerburg.....	Misbranding drugs.....	8- 5-14	Fined \$21.25.
Tippecanoe.....	Howell Bottling Works, Lafayette.....	Benzoate of soda in orange cider.....	8-10-14	Fined \$20.00.
Tippecanoe.....	H. W. Gagen, Lafayette.....	Benzoate of soda in orange cider.....	8-10-14	Fined \$20.00.
Vigo.....	W. M. Morris, Terre Haute.....	Cereal in weiner sausage.....	12- 5-13	Fined \$21.00.
Vigo.....	Ehrmann & Co., Terre Haute.....	Starch in sausage.....	12-15-13	Fined \$21.00.
Vigo.....	Shahadry Bros., Terre Haute.....	Watered milk.....	12- 6-13	Fined \$21.00.
Vigo.....	J. W. Phillips, Terre Haute.....	Skimmed milk and dirty milk.....	12- 6-13	Fined \$21.00.
Vigo.....	Summers & Stumpp, Terre Haute.....	Dirty milk.....	12- 6-13	Fined \$21.00.
Washington.....	Chas. V. Trinkle, Campbellburg.....	Selling misbranded food.....	7-20-14	Fined \$20.00.
Wayne.....	Foster Bottle Works, Richmond.....	Salicylic acid in pop or soda.....	7-14-14	Fined \$20.00.
Wells.....	William Sleppy, Bluffton.....	Selling milk that contained visible dirt.....	3- 1-14	Fined \$22.40.

## SANITARY INSPECTIONS.

Those departments of the State Board of Health devoted to the study of conditions in the food supply which may affect the public health find each year their field of work changing. The first years after the organization of the department were given chiefly to the study of the quality of the food supply with special reference to adulteration and misbranding. As the work developed, less attention to the suppression of fraud was necessary, and the field was widened by the development of the sanitary inspection service. This phase of pure food work, at first looked upon as an activity hardly contemplated in food legislation, has at length become the chief care of the department, and as this work has been extended by the passage of supplementary legislation and the setting aside of larger funds for the inspection service, the improved conditions have suggested the necessity for a still broader view of the purpose of food control.

We believe it is well within the province of the State Board of Health through its food and drug control not only to see that the food supply is pure and the drugs true to name, but also to give serious thought to means by which the food supply may be increased and the food industry as a whole lifted to a higher place among the industries of the State. A larger food supply obviously directly affects the health of the people. If at the same time the masses are provided with more food, they are given additional employment in its production, the State reaps a double benefit. For this reason we are endeavoring to broaden the work of the inspector, so that he may become more than a collector of samples or a critic of unsanitary conditions, and to give him a new field of effort in the development and upbuilding of the State.

It is hard to fix in any definite terms the improvements and progress made in developing food industries. A study of the tables appended shows little save the volume of work carried on. If it were possible, however, in a report to show the difference in the condition of the canning industry five years ago and now, the improvement would be so marked as to be striking. If the bottling industry of a few years ago and the present time could be compared, it would hardly be recognized as the same business, and if in spite of the slow progress made in improving dairy conditions as a whole the scores of modern, splendidly equipped and carefully operated dairies could be compared with the dairies whose places they have taken, the improvement noted would be so great as to merit special commendation.

The work of the food inspector in the future must largely be along constructive lines. There are many problems to be worked out. Each year, for instance, the poultry and egg business of Indiana, although commonly little considered as an important asset among the industries of the State, suffers a loss amounting to several millions of dollars. This loss is due to the sale in the State and on other markets of unsound eggs and of poultry damaged in shipment. All of this loss can be prevented and the food inspector is chargeable in no small degree with this important duty. And what is true of the egg industry is equally true of the other food industries of the State.

During the past year five inspectors have given much of their time to the study of sanitary conditions and a sixth inspector has been able to do considerable food control work in addition to his duties as inspector of weights and measures.

During the year, 417 cities and towns with a total population of 1,285,212 were visited. Many places were inspected several times and a large number of inspections made in the course of special work are not recorded in the list. The data referred to by no means represents the service given. The cities and towns visited are trading centers and supply not only their own population but the people throughout the adjoining country. It is safe to say that the food supply of 90 per cent. of the residents of the State is under the supervision of the inspectors.

Twelve thousand one hundred and six places were visited during the year. One hundred and forty-seven reports gave a grade of excellent to the places visited. Six thousand two hundred and seventeen or 50 per cent. of all the places visited were in good condition; 5,067 were rated as fair, 547 poor, and 128 as bad.

A study of conditions in the various industries is of much interest. Of the 444 dairies inspected during the year but one received a grade of excellent and but 43 of the entire number, or less than 10 per cent., were listed as good; 129 were fair, 163 poor, and 108 were bad. Although the dairy work was but 3.6 per cent. of the work done during the year, dairies contributed 83 per cent. of the total number of places reported as bad. In other words, while but 1 per cent. of all the inspections reported were listed as bad, 24 per cent. of all the dairies were so classed. This condition is wholly unsatisfactory, and it is to be doubted whether it can be controlled by State inspection. The improvement so necessary to a satisfactory milk supply cannot be forced by legislation. It must come from within the industry and it must come as a result not of leg-

isolation but an appreciation of the responsibility the milk producer assumes when he undertakes to provide the food supply of so large a percentage of the population.

Of the 4,611 grocery stores inspected 80 were rated excellent, 2,468 as good, 1,967 as fair, 89 poor, and 7 bad.

Of the 1,796 meat markets visited but 14 were in excellent condition, 989 good, 743 were fair, 47 were poor, and 3 bad.

As usual, drug stores are for the most part satisfactory. Of the 1,056 visited, 15 were in excellent condition, 830 were good, 208 fair, and but 3 poor.

Twenty-two of the 1,591 bakeries and confectioneries inspected were rated as excellent, 866 as good, 648 fair, 52 poor, and 3 bad.

Seven of the 1,529 hotels and restaurants were in excellent condition, 609 were good, 819 fair, 92 poor, and 2 bad.

Much work was done at slaughter houses, ice cream parlors, canning factories, cold storage plants and bottling works. A special report is elsewhere made of the inspection of bottling works and of canning factories.

CITIES AND TOWNS VISITED AND INSPECTED 1913-1914.

CITY OR TOWN.	COUNTY.	Number Times Inspected.	Population.
Acme.....	Jackson.....	1	.....
Adams.....	Decatur.....	1	378
Akron.....	Fulton.....	1	1,000
Albany.....	Delaware.....	1	1,289
Alexandria.....	Madison.....	2	5,096
Alfordsville.....	Davies.....	1	225
Alyesworth.....	.....	1	.....
Alquina.....	Fayette.....	1	111
Amboy.....	Miami.....	1	521
Amtry.....	Johnson.....	1	.....
Anderson.....	Madison.....	5	22,476
Andrews.....	Huntington.....	1	957
Angola.....	Steuben.....	2	2,610
Arcadia.....	Hamilton.....	2	990
Argos.....	Marshall.....	1	1,088
Atlanta.....	Hamilton.....	1	876
Attica.....	Fountain.....	4	3,335
Auburn.....	Dekalb.....	1	3,919
Aurora.....	Dearborn.....	6	4,410
Austin.....	Scott.....	1	398
Avilla.....	Noble.....	1	579
Asalis.....	Bartholomew.....	1	110
Barce.....	Benton.....	1	21
Batesville.....	Ripley.....	3	2,151
Bath.....	Franklin.....	1	125
Bedford.....	Lawrence.....	6	8,716
Benham.....	Ripley.....	1	135
Berne.....	Adams.....	1	1,316
Bicknell.....	Knox.....	2	2,794
Bocher.....	Scott.....	1	.....
Bloomfield.....	Greene.....	1	2,069
Blooming Grove.....	Franklin.....	1	120
Bloomington.....	Monroe.....	4	8,838
Bluffton.....	Wells.....	3	4,987
Borden.....	Clark.....	2	350
Boswell.....	Benton.....	1	814
Boonville.....	Warrick.....	1	3,934

## CITIES AND TOWNS VISITED AND INSPECTED 1913-1914—Continued.

CITY OR TOWN.	COUNTY.	Number Times Inspected.	Population.
Brasil.....	Clay.....	3	9,340
Bristol.....	Elkhart.....	1	535
Brooksburg.....	Jefferson.....	1	180
Brookville.....	Franklin.....	4	2,169
Bryant.....	Jay.....	1	469
Brownstown.....	Jackson.....	2	1,496
Buckcreek.....	Tippecanoe.....	1	242
Bunker Hill.....	Miami.....	1	668
Burney.....	Decatur.....	1	200
Burns City.....	Martin.....	1	250
Burnsville.....	Bartholomew.....	1	60
Butlerville.....	Jennings.....	1	400
Cammack.....	Delaware.....	1	180
Cambridge City.....	Wayne.....	1	2,287
Campbellsburg.....	Washington.....	1	666
Cannelburg.....	Daviess.....	2	300
Carbondale.....	Warren.....	1	65
Carmel.....	Hamilton.....	2	626
Cates.....	Fountain.....	1	200
Cayuga.....	Vermillion.....	2	911
Cedar Grove.....	Franklin.....	1	185
Centerville.....	Wayne.....	1	1,019
Chambersburg.....	Orange.....	1	110
Charlottesville.....	Hancock.....	1	500
Chrisney.....	Spencer.....	1	524
Cicero.....	Hamilton.....	1	990
Clarksburg.....	Decatur.....	1	454
Clarksbill.....	Tippecanoe.....	2	463
Clear Springs.....	Jackson.....	1	.....
Clifford.....	Bartholomew.....	1	210
Clifty.....	Decatur.....	1	211
Clinton.....	Vermillion.....	3	6,229
Cochran.....	Dearborn.....	1	858
Cole Station.....	.....	1	.....
Colfax.....	Clinton.....	1	801
Columbia City.....	Whitley.....	1	2,448
Columbus.....	Bartholomew.....	4	8,813
Commiskey.....	Jennings.....	1	150
Connersville.....	Fayette.....	4	7,738
Converse.....	Miami.....	1	1,164
Cornettsville.....	Daviess.....	1	85
Correct.....	Ripley.....	2	32
Cortland.....	Jackson.....	1	166
Corydon.....	Harrison.....	2	1,703
Covington.....	Fountain.....	1	2,069
Cowan.....	Delaware.....	1	181
Crandall.....	Harrison.....	1	133
Crawfordsville.....	Montgomery.....	3	9,371
Crothersville.....	Jackson.....	3	1,038
Cross Plains.....	Ripley.....	1	198
Cynthiana.....	Posey.....	1	610
Dabney.....	Ripley.....	2	80
Daleville.....	Delaware.....	1	650
Delaware.....	Ripley.....	1	250
Delphi.....	Carroll.....	2	2,161
Deputy.....	Jefferson.....	1	300
Dillsboro.....	Dearborn.....	2	425
Dudleytown.....	Jackson.....	1	75
Dugger.....	Sullivan.....	1	1,226
Dunkirk.....	Jay.....	1	3,031
Dunlapville.....	Union.....	1	122
Dunreith.....	Henry.....	1	181
Dupont.....	Jefferson.....	1	300
Earl Park.....	Benton.....	1	609
East Chicago.....	Lake.....	1	19,098
Eaton.....	Delaware.....	2	1,428
Edinburg.....	Johnson.....	2	2,040
Elisabethtown.....	Johnson.....	1	350
Ellettsville.....	Monroe.....	1	670
Elkhart.....	Elkhart.....	6	19,282
Elmora.....	Daviess.....	2	961
Elwood.....	Madison.....	3	11,098
English.....	Crawford.....	2	583
Epsom.....	Daviess.....	1	125

## CITIES AND TOWNS VISITED AND INSPECTED 1913-1914—Continued.

CITY OR TOWN.	COUNTY.	Number Times Inspected.	Population
Evansville.....	Vanderburgh.....	3	69,647
Everton.....	Fayette.....	2	150
Fairfield.....	Franklin.....	1	200
Fairland.....	Shelby.....	2	600
Fairmount.....	Grant.....	2	2,506
Farmersburg.....	Sullivan.....	1	1,115
Farmers Retreat.....	Dearborn.....	2	1,130
Farmland.....	Randolph.....	1	907
Flahers.....	Hamilton.....	1	188
Flat Rock.....	Bartholomew.....	1	350
Florence.....	Switzerland.....	1	240
Floyda Knobs.....	Floyd.....	1	255
Forest Hill.....	Decatur.....	1	111
Forest.....	Clinton.....	1	350
Fort Branch.....	Gibson.....	1	1,182
Forest.....	Warren.....	1	50
Fort Wayne.....	Allen.....	4	63,933
Fountaintown.....	Shelby.....	1	350
Fowler.....	Benton.....	1	1,491
Fowletown.....	Grant.....	1	293
Frankfort.....	Clinton.....	3	8,634
Franklin.....	Johnson.....	4	4,502
Frankton.....	Madison.....	1	936
Freetown.....	Jackson.....	2	350
Fredericksburg.....	Washington.....	1	271
French Lick.....	Orange.....	2	1,803
Friendship.....	Ripley.....	1	250
Gaff.....	Ripley.....	1	24
Galena.....	Floyd.....	1	175
Galveston.....	Cass.....	1	658
Gary.....	Lake.....	4	16,802
Garrett.....	Dekalb.....	1	4,149
Gas City.....	Grant.....	1	3,224
Gaston.....	Delaware.....	2	638
Georgetown.....	Floyd.....	1	331
Geneva.....	Adams.....	1	1,140
Goshen.....	Elkhart.....	4	8,614
Greenfield.....	Hancock.....	1	4,448
Green Hill.....	Warren.....	1	170
Greenville.....	Floyd.....	1	227
Greenwood.....	Rush.....	3	1,608
Guion.....	Parke.....	1	50
Hackleman.....	Wayne.....	1	82
Hagerstown.....	Stark.....	1	936
Hamlet.....	Lake.....	2	579
Hammond.....	Jefferson.....	2	20,925
Hanover.....	Washington.....	1	356
Hardinsburg.....	Blackford.....	2	254
Hartford City.....	Bartholomew.....	2	6,187
Hartsville.....	Jennings.....	1	250
Hayden.....	Clark.....	1	375
Henryville.....	Warren.....	1	480
Hetuck.....	Fountain.....	1	528
Hillsboro.....	Ripley.....	2	350
Holton.....	Bartholomew.....	3	1,223
Hope.....	Decatur.....	1	50
Horace.....	Jackson.....	1	125
Houston.....	Lagrange.....	1	700
Howe.....	Dubois.....	2	2,464
Huntingburg.....	Huntington.....	3	10,272
Independence.....	Warren.....	1	300
Indiana Harbor.....	Lake.....	2	9,000
Indianapolis.....	Marion.....	7	233,650
Jalapa.....	Grant.....	1	90
Jasper.....	Dubois.....	1	2,106
Jeffersonville.....	Clark.....	4	10,412
Jonesboro.....	Grant.....	1	1,573
Kendallville.....	Noble.....	1	4,981
Kennard.....	Henry.....	1	449
Kile.....	Dearborn.....	1	

## CITIES AND TOWNS VISITED AND INSPECTED 1913-1914—Continued.

CITY OR TOWN.	COUNTY.	Number Times Inspected.	Population.
Kingman	Fountain	1	535
Knox	Starke	2	1,644
Knightstown	Henry	1	2,068
Kokomo	Howard	3	17,010
Kramer	Warren	1	212
Kurts	Jackson	1	200
Ladoga	Montgomery	1	1,148
Lafayette	Tippecanoe	2	20,081
Lake	Spencer	1	450
Lakeville	St. Joseph	1	227
Lagrange	Lagrange	1	1,772
Lamb	Switzerland	1	26
Landes	Grant	1	194
Laporte	Laporte	7	10,525
Laurel	Franklin	2	503
Lawrenceburg	Dearborn	5	3,930
Lebanon	Boone	1	5,474
Leesburg	Kosciusko	1	401
Leota	Scott	1	32
Letts	Decatur	1	200
Lewis Creek	Shelby	1	85
Lewisville	Henry	1	448
Lexington	Scott	1	350
Liberty	Union	2	1,388
Liberty Center	Wells	1	351
Ligonier	Noble	1	2,173
Lincolnville	Wabash	1	162
Linton	Greene	3	5,906
Linnsburg	Montgomery	1	25
Logansport	Cass	2	19,050
Loogootee	Martin	1	2,154
Lookout	Ripley	1	40
London	Shelby	1	200
Lovett	Jennings	1	75
Ludyville	Warren	1	
Lynn	Randolph	1	917
Lyon Station	Fayette	1	148
Mace	Montgomery	1	320
Madison	Jefferson	5	6,934
Mohawk		1	
Manchester	Dearborn	1	350
Marengo	Crawford	1	686
Marion	Grant	6	19,359
Marietta	Shelby	1	210
Markland	Switzerland	3	200
Markle	Huntington	1	820*
Marshfield	Warren	1	256
Maxwell	Hancock	1	350
Mechanicsburg	Henry	1	175
Medora	Jackson	1	675
Metamora	Franklin	1	588
Mellott	Fountain	1	372
Michaelville		1	
Michigan City	Laporte	6	19,027
Middleburg	Elkhart	1	
Middletown	Henry	2	1,174
Mier	Grant	1	219
Milan	Ripley	4	557
Milford	Kosciusko	1	814
Milroy	Rush	1	770
Milhouse	Decatur	1	211
Milltown	Crawford	1	586
Mishawaka	St. Joseph	4	11,886
Mitchell	Lawrence	1	3,438
Moore Hill	Dearborn	2	424
Montgomery	Davies	2	511
Montpelier	Blackford	1	2,788
Morris	Ripley	1	420
Morristown	Shelby	1	622
Mount Auburn	Wayne	1	120
Mount Carmel	Franklin	1	142
Mount Comfort	Hancock	1	134
Mount Summit	Henry	1	270
Mount Vernon	Posey	2	5,563



## CITIES AND TOWNS VISITED AND INSPECTED 1913-1914—Continued.

CITY OR TOWN.	COUNTY.	Number Times Inspected.	Population
Mount Zion.....	Wells.....	1	250
Mulberry.....	Clinton.....	1	760
Muncie.....	Delaware.....	7	24,005
Nabbs.....	Scott.....	1	105
Napolean.....	Ripley.....	1	520
Nebraska.....	Jennings.....	1	153
Newburg.....	Warrick.....	1	1,097
Newbern.....	Bartholomew.....	1	200
New Bath.....	Franklin.....	1	
New Carlisle.....	St. Joseph.....	2	612
New Castle.....	Henry.....	3	9,446
New Harmony.....	Posey.....	1	1,229
New Marion.....	Ripley.....	1	225
New Middletown.....	Harrison.....	1	145
New Point.....	Decatur.....	2	341
New Paris.....	Elkhart.....	1	500
New Ross.....	Montgomery.....	1	296
New Trenton.....	Franklin.....	1	200
Nineveh.....	Johnson.....	1	250
Noblesville.....	Hamilton.....	1	5,073
Normal.....	Grant.....	1	50
North.....	Ohio.....	1	65
North Jackson.....	Starke.....	1	1,143
North Manchester.....	Wabash.....	1	2,428
North Vernon.....	Jennings.....	7	2,915
Norristown.....	Shelby.....	1	
Oaktown.....	Knox.....	1	608
Oakville.....	Delaware.....	1	175
Odon.....	Daviess.....	2	1,064
Ogilville.....	Bartholomew.....	1	80
Old Bath.....	Franklin.....	1	
Oldenburg.....	Franklin.....	1	966
Oolitic.....	Lawrence.....	2	1,079
Orleans.....	Orange.....	1	1,367
Owocoka.....	St. Joseph.....	1	180
Osgood.....	Ripley.....	2	1,169
Ossian.....	Wells.....	1	661
Owensville.....	Gibson.....	2	1,237
Oxford.....	Benton.....	1	1,010
Palmira.....	Harrison.....	1	252
Paoli.....	Orange.....	1	1,278
Parker.....	Randolph.....	2	800
Paris Crossing.....	Jennings.....	1	380
Patriot.....	Switzerland.....	3	340
Pekin.....	Washington.....	2	300
Pence.....	Warren.....	1	150
Pemntown.....	Ripley.....	1	
Peru.....	Miami.....	2	10,910
Petersburg.....	Pike.....	2	2,170
Philadelphia.....	Hancock.....	1	182
Pierceville.....	Ripley.....	1	150
Pine Valley.....	Warren.....	1	
Plainville.....	Daviess.....	1	450
Plymouth.....	Marshall.....	3	3,838
Point Isabel.....	Grant.....	1	175
Portland.....	Jay.....	1	5,130
Poseyville.....	Posey.....	1	780
Prescott.....	Shelby.....	1	105
Princeton.....	Gibson.....	1	6,448
Quakertown.....	Union.....	1	75
Queensville.....	Jennings.....	1	110
Radley.....	Grant.....	1	75
Rainsville.....	Warren.....	1	120
Raymond.....	Franklin.....	1	60
Redkey.....	Jay.....	2	1,714
Rego.....	Orange.....	1	57
Richmond.....	Wayne.....	5	22,324
Ridgeville.....	Randolph.....	1	1,302
Riddington.....	Jennings.....	1	
Rigdon.....	Grant.....	1	300

## CITIES AND TOWNS VISITED AND INSPECTED 1913-1914—Continued.

CITY OR TOWN.	COUNTY.	Number Times Inspected.	Population.
Rising Sun.....	Ohio.....	3	1,513
Rochester.....	Fulton.....	1	3,364
Rockford.....	Jackson.....	1	150
Rockfort.....	Spencer.....	1	2,738
Rockville.....	Parke.....	1	1,943
Rolling Prairie.....	Laporte.....	1	446
Roseburg.....	Grant.....	1	90
Rushville.....	Rush.....	2	4,925
Russaville.....	Howard.....	4	603
Saint Louis Crossing.....	Bartholomew.....	1	200
Saint Omer.....	Decatur.....	1	300
Saint Paul.....	Decatur.....	2	1,050
Salem.....	Washington.....	1	2,283
Sandusky.....	Decatur.....	1	140
Scipio.....	Jennings.....	1	200
Scottsburg.....	Scott.....	1	1,689
Sellersburg.....	Clark.....	1	676
Seelyville.....	Vigo.....	1	1,188
Seymour.....	Jackson.....	3	6,305
Sharpville.....	Tipton.....	2	550
Shelburn.....	Sullivan.....	2	2,055
Sheridan.....	Hamilton.....	1	1,768
Shelbyville.....	Shelby.....	3	9,500
Shideler.....	Delaware.....	1	150
Shipshewana.....	Lagrange.....	1	600
Shirley.....	Hancock.....	2	1,519
Shoals.....	Martin.....	1	1,015
Sloan.....	Warren.....	1	
Somerset.....	Wabash.....	1	320
South Bend.....	St. Joseph.....	2	53,684
Spades.....	Ripley.....	1	150
Spencer.....	Owen.....	1	2,150
Spiceland.....	Henry.....	2	622
Springhurst.....	Henry.....	1	
State Line.....	Warren.....	1	194
Stillwell.....	Laporte.....	1	250
Stinesville.....	Monroe.....	2	497
Stone Bluff.....	Fountain.....	1	300
Straughn.....	Henry.....	1	234
Sullivan.....	Sullivan.....	2	4,115
Sunman.....	Ripley.....	2	353
Surprise.....	Jackson.....	1	100
Swayzee.....	Grant.....	2	836
Sweeters.....	Grant.....	1	700
Taylorsville.....	Bartholomew.....	1	450
Tell City.....	Perry.....	1	3,369
Terre Haute.....	Vigo.....	6	58,157
Tipton.....	Tipton.....	4	4,075
Treaty.....	Wabash.....	1	100
Troy.....	Perry.....	1	510
Union City.....	Randolph.....	1	3,209
Uniontown.....	Jackson.....	1	75
Universal.....	Vermillion.....	2	
Upland.....	Grant.....	1	1,080
Utica.....	Clarke.....	1	426
Valence.....	Orange.....	1	104
Vallonia.....	Jackson.....	2	475
Van Buren.....	Grant.....	1	1,189
Voedersburg.....	Fountain.....	3	1,757
Vernon.....	Jennings.....	2	453
Versailles.....	Ripley.....	2	496
Vevay.....	Switzerland.....	4	1,256
Vincennes.....	Knox.....	2	14,895
Wabash.....	Wabash.....	2	8,687
Waldron.....	Shelby.....	1	480
Walkerton.....	St. Joseph.....	1	1,003
Walton.....	Case.....	1	579
Wallace.....	Fountain.....	1	116
Warsaw.....	Kosciusko.....	1	4,430
Warren.....	Huntington.....	2	1,189
Washington.....	Davies.....	3	7,854

## CITY AND TOWNS VISITED AND INSPECTED 1913-1914—Continued.

CITY OR TOWN.	COUNTY.	Number Times Inspected.	Population
Waterloo.....	Dekalb.....	1	.....
Waveland.....	Montgomery.....	1	676
Wawasee.....	Kosciusko.....	1	30
Waymansville.....	Bartholomew.....	1	150
Weaver.....	Grant.....	1	40
Weisburg.....	Orange.....	1	125
West Baden.....	Orange.....	4	746
Westfield.....	Hamilton.....	2	700
West Lebanon.....	Warren.....	1	642
West Reddington.....	Jackson.....	1	.....
Westport.....	Decatur.....	2	675
West Terre Haute.....	Vigo.....	2	3,083
Whiting.....	Lake.....	1	6,587
Wilkinson.....	Hancock.....	1	420
Willow.....	Hancock.....	1	140
Williams.....	Lawrence.....	3	200
Winchester.....	Randolph.....	2	4,266
Windfall.....	Tipton.....	1	899
Winthrop.....	Warren.....	1	95
Worthington.....	Greene.....	1	1,732
Total population of cities and towns inspected.....			1,285,312
Different cities and towns visited.....			417

## SUMMARY OF INSPECTIONS.

INSPECTIONS.	Number Inspected.	Number Excellent.	Number Good.	Number Fair.	Number Poor.	Number Bad.
Dairies.....	444	1	43	129	163	108
Grocery stores.....	4,611	80	2,468	1,967	89	7
Meat markets.....	1,796	14	989	743	47	3
Drug stores.....	1,056	15	830	208	3	0
Bakeries and confectioneries.....	1,591	22	866	648	52	3
Hotels and restaurants.....	1,529	7	609	819	92	2
Creameries.....	39	0	24	15	0	0
Milk depots.....	30	0	13	16	1	0
Fish markets.....	53	0	20	27	6	0
Slaughter houses.....	123	1	30	68	22	2
Poultry houses.....	85	0	15	54	15	1
Bottling works.....	135	2	60	68	5	0
Ice cream parlors.....	218	2	66	133	17	0
Ice cream factories.....	44	1	17	22	4	0
Canning factories.....	135	1	50	65	18	1
Produce companies.....	9	0	7	2	0	0
Flour mills.....	22	0	21	1	0	0
Fruit and vegetable stores.....	31	0	17	13	1	0
Wholesale groceries.....	34	0	28	6	0	0
Wholesale fruit stores.....	2	0	2	0	0	0
Ice and cold storage plants.....	8	0	6	2	0	0
Ice plants.....	2	0	1	1	0	0
Saloons.....	63	0	9	43	10	1
Breweries.....	3	0	2	1	0	0
Oyster house.....	1	0	1	0	0	0
Tea and coffee companies.....	3	1	2	0	0	0
Wholesale produce companies.....	2	0	1	1	0	0
Lunch carts.....	7	0	3	4	0	0
Butter and cheese factory.....	1	0	1	0	0	0
Stock yards.....	1	0	0	1	0	0
Potato chip factory.....	1	0	1	0	0	0
Pharmaceutical manufactories.....	27	0	15	10	2	0
Total.....	12,106	147	6,217	5,067	547	128

## COMPARATIVE STUDY OF SANITARY CONDITIONS.

The tabulation following is made to show the change in the sanitary condition noted by the inspectors during the years from 1907 to 1914 inclusive. In general, constant progress is being made.

## COMPARATIVE STUDY OF SANITARY CONDITIONS IN 1907-1914.

INSPECTIONS.	Year.	CONDITION				
		Excellent Per Cent.	Good Per Cent.	Fair Per Cent.	Poor Per Cent.	Bad Per Cent.
Dairies.....	1907	5.2	16.2	43.5	19.1	15.8
	1908	1.4	14.8	44.1	26.8	12.7
	1909	1.0	20.2	39.5	30.2	8.5
	1910	0.0	13.7	42.9	24.3	19.0
	1911	0.5	9.5	23.6	35.1	31.1
	1912	0.5	3.2	32.4	37.2	26.4
	1913	0.3	16.1	43.0	31.8	8.6
	1914	0.2	9.0	29.0	36.7	24.3
Grocery stores.....	1907	4.2	39.0	46.5	8.8	1.4
	1908	2.8	45.5	46.1	4.9	.75
	1909	4.8	53.6	35.6	5.3	1.0
	1910	3.8	60.3	30.8	4.6	.3
	1911	2.4	57.3	35.2	4.5	.3
	1912	2.2	62.8	31.0	3.5	.3
	1913	3.6	64.2	29.0	2.9	.1
	1914	1.7	53.5	42.6	1.9	.1
Meat markets.....	1907	2.8	35.0	47.3	9.9	4.9
	1908	1.8	39.8	47.4	10.1	1.8
	1909	2.2	57.7	34.0	5.4	.5
	1910	3.4	58.8	32.0	4.8	.2
	1911	1.3	53.2	39.7	5.2	.5
	1912	.9	60.4	35.3	2.4	.3
	1913	1.9	64.7	30.2	2.9	.1
	1914	.7	55.0	41.3	2.6	.2
Drug stores.....	1907	8.1	58.4	30.7	3.2	.0
	1908	5.4	76.9	15.8	1.6	.0
	1909	3.8	72.9	18.7	3.4	.8
	1910	2.2	80.6	13.6	3.0	.4
	1911	1.5	78.4	18.3	1.4	.08
	1912	1.9	77.9	18.3	1.6	1.6
	1913	9.7	76.7	12.4	1.1	.0
	1914	1.4	79.5	19.6	0.2	0.0
Bakeries and confectioneries.....	1907	4.4	40.5	40.8	11.6	2.8
	1908	4.3	39.1	46.4	8.0	2.1
	1909	3.7	49.7	36.2	8.9	1.4
	1910	3.8	52.5	37.3	5.4	.8
	1911	2.6	55.3	35.6	5.9	.4
	1912	1.8	56.6	36.0	4.9	.4
	1913	4.0	61.0	31.6	2.7	.5
	1914	1.3	54.4	40.7	3.2	.1
Hotels and restaurants.....	1907	4.5	33.7	40.5	18.0	3.2
	1908	2.0	34.6	48.9	11.4	1.6
	1909	1.3	32.8	47.2	16.1	2.2
	1910	.9	37.7	52.3	8.1	.8
	1911	.7	35.1	52.0	10.6	1.5
	1912	.6	41.0	50.3	7.4	.4
	1913	2.4	45.8	45.6	5.5	.5
	1914	.4	39.8	53.5	6.0	.1

## CONDEMNATION REPORTS.

The so-called condemnation report used for the past five years offers the department a most effective means for improving sanitary conditions. The responsibility for action rests under the law not with the inspector but with the commissioner, and instructions issued from the office are almost without exception promptly obeyed.

During the year condemnation notices were issued against 530 places. In 471 cases the report was issued because of the maintenance of unsanitary conditions; in 366 places the building was as well improperly constructed.

A complete summary of all notices issued follows:

CLASSIFICATION.	Reasons for Condemnation.		Total Number of Places Condemned.
	Unsanitary Conditions.	Improper Construction.	
Bakeries.....	31	19	35
Bakeries and restaurants.....	1	2	2
Bottling works.....	32	39	33
Canning factories.....	2	3	3
Confectioneries.....	9	6	9
Creameries.....	2	2	2
Dairies.....	154	127	173
Drug stores.....	2	1	2
Fish and poultry markets.....	6	4	6
Grocery stores.....	47	33	51
Grocery and lunch counter.....	1		1
Grocery and meat markets.....	25	16	27
Grocery, meat market and bakery.....	1		1
Hotels.....	17	16	17
Meat markets.....	42	19	43
Milk depots.....	1	1	1
Poultry houses.....	4	2	5
Restaurants.....	70	52	85
Restaurants and bakeries.....	1	1	1
Restaurants and saloons.....	8	10	17
Slaughter houses.....	14	12	15
Toilets.....	1	1	1
Total.....	471	366	530

## INSPECTION OF CANNERIES, SEASON OF 1914.

In the fall of 1913 the operators of canning factories were supplied with plans and specifications for the construction of toilets, dressing-rooms and washrooms. The plans were made only after studying model installations already in use. This notice read as follows:

### INDIANA STATE BOARD OF HEALTH.

Department of Food and Drugs.

#### NOTICE TO CANNERS AND PACKERS.

The improvement in the construction and operation of Indiana canneries has been marked, and with few exceptions factories are well adapted for the purpose for which they are used. The most serious criticism which

can be made is that many factories do not provide employes with adequate toilet, washing and dressing room facilities. The attention, which during the last three years has been directed toward the installation of concrete floors, more light and ventilation and excellent mechanical washing devices for products, should now be turned to the improved sanitary condition of toilets and the construction of washing and dressing rooms. We are convinced that the toilets, as they exist at many factories in the form of outhouses, with or without vaults, should not longer be permitted. It is impossible to keep them clean, fly proof or decent. The following order is therefore promulgated and the improvements therein required are to be completed before the opening of the packing season of 1914.

All factories in which fruit and vegetables are prepared or packed for human consumption shall be provided with modern toilets, technically known as "closet combinations," operated by water under pressure and connected to a sewer and properly trapped.

Sinks supplied with water under pressure shall be provided adjacent to such toilets at which all employes shall be compelled to wash their hands after visiting toilets.

Soap and clean towels shall be provided in sufficient quantity.

Sanitary drinking fountains supplied with pure drinking water shall be provided for the use of operatives. The use of water buckets and dippers is forbidden.

In order that operators of canning factories may be guided in the construction and installation of these improvements, we have prepared and herewith enclose a draft of plans for toilets to be installed in canning factories, and specifications for the construction of such toilets. The plans are suggestive only. We believe them to be complete in every detail and suitable for installation in every progressive plant.

The plans call for a detached building. This, however, although advisable, is not necessary, and if room is available the toilets may be built within the factory if proper outside ventilation and tight fitting inside doors are provided. The men's and women's toilets may be in separate parts of the building, although such separation necessitates additional plumbing. When they are in the same part of the building the entrances must be entirely independent and screened one from the other by suitable partitions.

The wash rooms should be adjacent to the toilets, and suitable dressing rooms should be provided.

A shower bath, which can be installed for a few dollars, is not a luxury, but on the contrary a most reasonable provision, that will return its cost ten fold, because of the increased efficiency of employes.

We have prepared three sets of specifications but we advise the use of the first set, as the difference in cost of wood and cement flooring is not great and the ease with which cement floors may be kept clean and their durability makes their use advisable.

We include estimates of the cost of construction of toilets according to the plans suggested which were submitted by contractors in northern, central, western and southern Indiana. Much of the expense involved may be avoided by using the common labor about the plant in the construction of cement work, foundations, excavating, etc.

We appreciate the fact that a large number of Indiana factories are already provided with entirely adequate toilets and washing and dressing rooms. We have no suggestions to make to the operators of such plants, for they have already merited our approval. We trust that the plants which in the past have not been adequately provided with these essentials, will during the coming season, and in the future, meet every requirement of cleanliness and decency.

If we can be of any assistance in devising plans to meet special situations, or in the installation of sewage disposal plants, we shall be gratified with the opportunity to serve.

Please direct all inquiries concerning this order and the plans and specifications attached, to

H. E. BARNARD,  
State Food and Drug Commissioner.

### SPECIFICATIONS.

For Toilets to be Installed in Indiana Canning Factories.

#### PLAN No. 1.

These specifications are to be used in connection with a set of blue prints for a building to be used as a toilet and rest rooms, in connection with canning factories in Indiana. The lumber to be used in said building is that used for building purposes in the city or town where said building is to be built. All material is to be as specified below.

#### *Excavating.*

All excavation to be made for foundation trenches, cement floor and drain pipes.

#### *Foundation.*

The foundation is to be either concrete or brick, and to be built according to plans.

#### *Cement Work.*

The cement floor of building to be as plan shows. Concrete to be mixed as follows: One sack of good make of American Portland cement to six cubic feet of good, clean, concrete gravel. To be cut two times dry and two times wet and spread and well tamped in place. Face to be  $\frac{3}{4}$ -inch thick and to be mixed as follows: One part of cement same as concrete and two parts of good clean sand mixed and cut so when spread it will not leave streaks. Floor to have the proper fall to each drain as shown on plans.

#### *Plumbing.*

The plumbing to be installed as shown on the plans. The closet seats and lavatories to be of medium priced material. The installation of all piping concealed or otherwise to be governed by the Board of Health laws and rules of the city or town where building is to be built. The drain from each fixture and shower bath to have the proper fall to and connect with a sanitary sewer or dry well.

*Dry Well.*

The dry well to be 4'x4', and to be dug to gravel, and if no gravel, well to be not less than (20) twenty feet deep, and to be walled up with bricks. (To be used only in case no sewer or other method of disposal is available.)

*Lumber.*

The sizes of lumber to be as follows:

Foundation plates to be 2"x8" anchored to wall with  $\frac{1}{2}$ " bolts.

Studplates to be 2"x4".

Studs to be 2"x4".

Rafters to be 2"x4".

Siding to be of bungalow style and placed on for staining, or dressed siding to be placed on for painting.

*Sheathing.*

The sheathing to be 1"x4" placed 4" apart.

The shingles to be placed  $4\frac{1}{2}$ " apart.

*Joist.*

The ceiling joist to be 2"x6", placed 24" C. to C.

*Ceiling.*

All walls and ceiling to be of tongue and grooved boarding.

*Openings.*

All doors and windows to be as size shown on plans, and all outside openings to be screened.

*Painting.*

The building to be painted on the exterior, two coats.

*Dead Wall.*

The wall between the women's and men's room to be filled with cinders or some other deadening material equally as good.

**PLAN No. 2.**

This specification is the same as specification No. 1, with the exception that the inside of the outside walls and ceiling will not be ceiled with tongue and grooved boardings, and deadening wall will extend to rafter line. A rubberoid roofing may be used.

All other work must be carried out as otherwise specified.

**PLAN No. 3.**

This specification as to plumbing, draining, openings and screening openings, may be as follows: Building may be built on piers, such as wood blocks, bricks or concrete, placed such distance apart as to carry building safely as to size of sill.

*Sill.*

The sills to be 8"x8".

*Joists.*

First floor joist to be 2"x8"—16" C. to C.



*Floor.*

Floor to be  $\frac{7}{8}$ " by 4", No. 1 Yellow pine to have proper fall to each drain.

*Siding.*

Siding to be No. 1 or No. 2 shiplap.

*Sheathing.*

The sheathing to be laid so as to receive rubberoid roofing.

*Roofing.*

The roofing to be of two-ply rubberoid roofing.

*Ceiling.*

The ceiling and deadening wall to be same as specification No. 2.

NOTE.—The cost between concrete foundation and piers, and cement floor and wood floor is so small and the upkeep on wood floor will be so much greater, that we advise all builders to use the concrete foundation and floors.

## ESTIMATES OF COST OF CONSTRUCTION.

## SPECIFICATION No. 1.

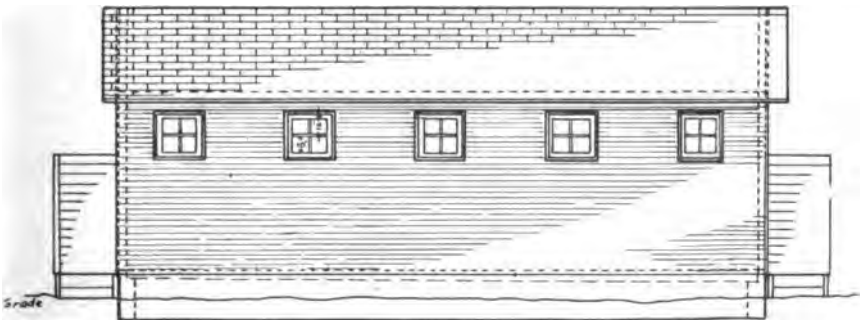
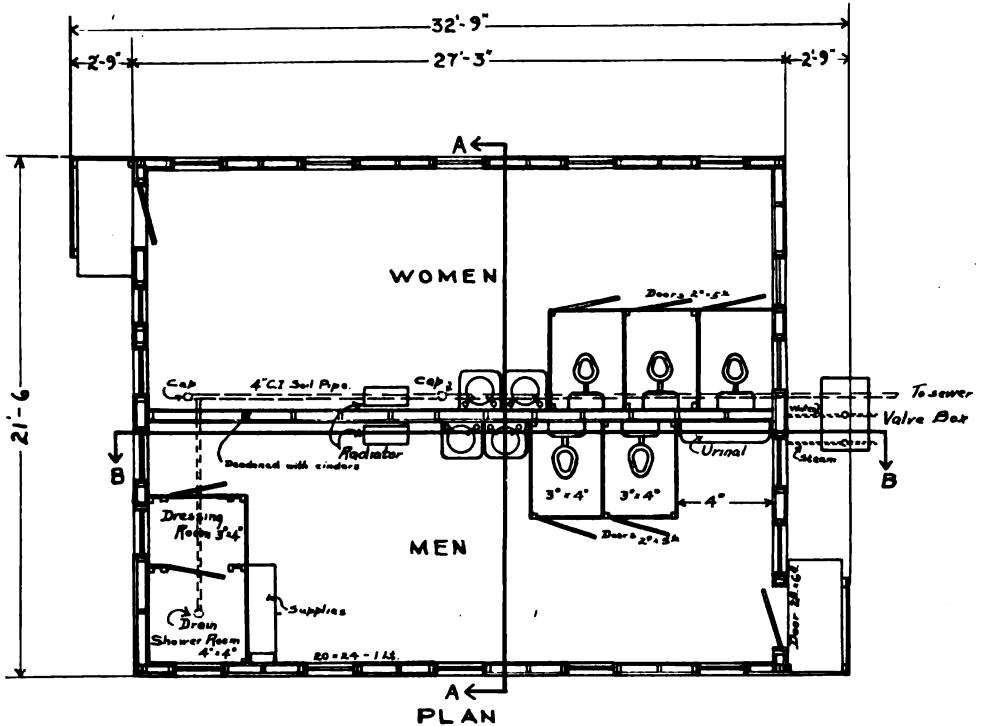
<i>Item.</i>	<i>Cost.</i>
Lumber and hardware, including carpenter work.....	\$308 00 to \$436 56
Flooring, concrete .....	44 35 to 71 00
Foundation, concrete .....	28 00 to 49 08
Plumbing, with shower .....	330 00 to 567 80
Plumbing, without shower .....	310 00 to 532 80
Excavating .....	5 00 to 10 00
Painting .....	51 55 to 75 00
Screens .....	12 00 to 26 00
Total, with shower .....	\$915 00 to \$1,207 05
Total, without shower .....	\$867 00 to \$1,172 05

## SPECIFICATION No. 2.

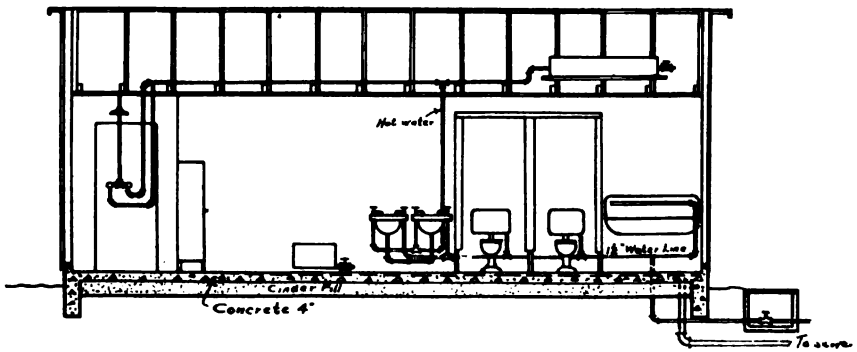
<i>Item.</i>	<i>Cost.</i>
Lumber and hardware, including carpenter work—	
Shingle roofing .....	\$268 00 to \$398 26
Rubberoid roofing .....	250 00 to 398 26
Flooring, concrete .....	44 35 to 71 00
Foundation, concrete .....	28 00 to 49 08
Plumbing, with shower .....	330 00 to 567 80
Plumbing, without shower .....	310 00 to 532 80
Excavating .....	5 00 to 10 00
Painting .....	50 00 to 61 00
Screens .....	12 00 to 26 00
Total, shingle roof, with shower.....	\$754 00 to \$1,159 80
Total, shingle roof, without shower.....	706 00 to 1,114 80
Total, rubberoid roof, with shower.....	745 00 to 1,138 80
Total, rubberoid roof, without shower.....	\$697 00 to \$1,108 80

## SPECIFICATION No. 3.

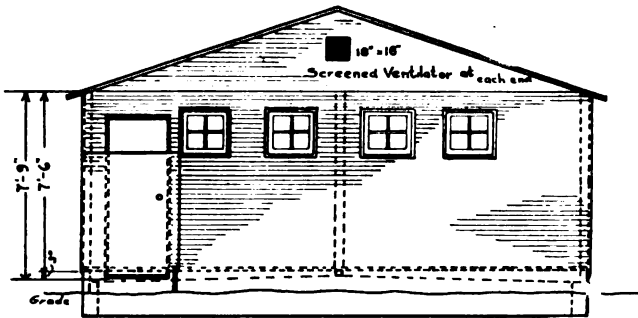
Item.	Cost.
Lumber and hardware, including carpenter work.....	\$325 00 to \$444 00
Foundation .....	18 00 to 35 00
Plumbing .....	343 30 to 532 80
Painting .....	51 55 to 60 00
Screens .....	12 00 to 18 00
Total .....	\$777 00 to \$1,089 80



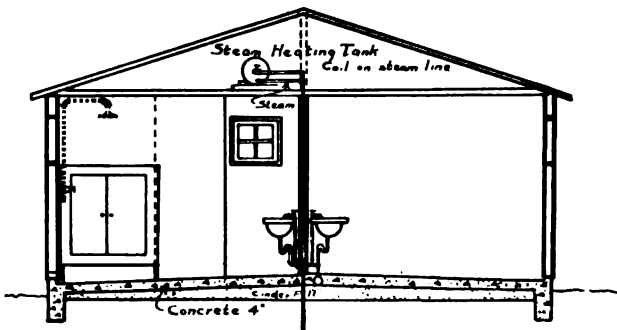
SIDE ELEVATION



SECTION B-B



FRONT ELEVATION.



The inspectors' reports covering the condition of the factories during the season of 1914 show a very great improvement in respect to the construction and operation of toilets, washrooms and dressing rooms.

Not every canner in the State obeyed our orders. A few made no attempt to obey them. They will not be in operation in 1915, but every canner who had any respect for his business, any plans for the future, any appreciation of his responsibility as a manufacturer of food stuffs did earnestly work to the end we had in view. Many entirely new toilets and dressing rooms were installed. We have been delighted to find small country plants operated for but a few weeks in the year splendidly provided for in this respect. With possibly one exception all the plants constructed this past season have considered the installation of toilets as carefully as the installation of boilers. Where the plans suggested were not carried out this past season we have promise of compliance which will have to be made good before next season opens. If they are not made good there will be no next season and cannery who are not prepared to provide decent, clean, flyproof toilets which meet the approval of our inspectors, adequate washing facilities and pure drinking water should not go to the trouble of contracting acreage which when grown they cannot pack.

The plants in the State which have made a profit this past season are the good plants, the plants which were properly lighted, in which the workers were able to produce a maximum yield, plants where the waste products in the shape of peelings and small tomatoes were worked up into trimming stock, pulp or catsup rather than thrown away.

Some conditions are not operating to the benefit of the canning industry of this State.

In the first place we must admit that a cannery cannot be successful where acreage is not available. Nevertheless there are a number of canneries in this State which cannot get sufficient acreage within a reasonable hauling distance of the home plant to make a profitable season's run. No canning factory should be established in territory where it will not be possible to secure acreage.

Second, although this statement may be contrary to the views of some cannery present, no plant should be established in a locality not provided with an adequate water supply. We have visited canneries this past season where the water supply was so short that it was hardly possible to keep steam in the boiler. Tomatoes, for instance, were not washed, they were dipped in a tank of yellow mud and went to the peeling tables in such condition that we cannot understand how the goods there packed will ever pass Government inspection. We appreciate the fact that water is hard to get in some of the finest tomato districts in the State. Nevertheless it must be had, for under present methods of operation, an ample supply of water under pressure is an absolute essential to bacterial cleanliness.

Third, the disposal of factory wastes, either in the form of wash water or vegetable matter subject to decay, is a problem which must be solved. It is not enough for the canner to say that he is doing everything in his power to relieve a bad situation. This waste must be taken care of in such a way that it does not become a nuisance. The time to make provision

for proper disposal is before damage suits are filed. Without a doubt the money the canner spends in defending damage suits and employing lawyers and experts, if properly applied, would take care of his wastes. During the past year a number of septic tank systems have been installed. Some of the systems are working fairly well, others are not working at all. There are several reasons why the systems refuse to work, but of which the average canner knows nothing. They will not work until the necessary bacteria are present in enormous numbers. Usually this inoculation takes a month or more. By that time the season is half over and much damage has been done. The bacteria are easily killed by heat. Hot water discharged into a septic tank will ruin its efficiency. The bacteria must be allowed time to complete their work. A septic tank if overcrowded is no better than an open ditch. For these and other reasons we doubt the advisability of installing septic tanks at the canning factories which are operated but a few weeks in the year. Coarse material can be screened out, heavy solid matter can be precipitated. The practice of running such refuse as the debris from the cyclone can be stopped. If the only material from the tomato cannery for instance, which is allowed to flow upon the ground of the cannery is wash water, there should be no serious complaint from neighbors.

Fourth, If any Indiana canners complain of a bad season and are unable to meet their obligations at the bank, in our opinion they can look for a reason no further than faulty management. Anyone who has visited, as our men have done, the canning factories of the State year after year, knows almost at a glance whether or not the factory management is adequate or unsatisfactory. A sanitary plant and a good pack depends not so much upon the equipment as it does upon the man in charge. Many companies have not learned that a canning factory cannot be operated by untrained day laborers, and that there is anything more to the canning business save their ability to so process goods that they will not develop "swells" in the warehouse. Many other plants so appreciate the necessity for scientific management and control that they are installing and operating laboratories where every run is carefully checked and from which the operation of the factory can be directed so that the bad run of Monday is not repeated on Tuesday.

Eventually the canner must be scientifically trained. It will not suffice that he is a large stockholder or that he has the backing of the local bank. We are asking of our superintendents that they bring to their work a thorough knowledge of their business, that they know how to handle men, that they can see waste and stop it, and, above all, that they appreciate their responsibility as an important part of the organization that is making the Indiana pack its splendid reputation and the Indiana canner a leader in the industry.

Our inspectors report that 38 canning factories have good, that is, sanitary, properly ventilated, clean toilets, and in 36 plants, the toilets are in fair condition. In 19 plants they are poor. Eighteen of these 19 plants where the toilet facilities are poor have said that they would build model toilets and dressing rooms before the season of 1915 opens. In 12 plants we found new and thoroughly satisfactory installations.

In one plant in Indiana we found the superintendent making pulp by

the old process of sedimentation, allowing the tomato solids and tomato liquor to separate and then turning the liquor into the sewer apparently wholly ignorant of the fact that this water liquor contained practically all the sugar, acid and valuable mineral constituents necessary to make a satisfactory pulp or palatable catsup.

In a few plants we found sorters trying to pick out rotten and speckled tomatoes after they had passed through the steam chest. Such work is costly and utterly useless. The sorting must be done after the tomatoes have received their first wash, and to be done properly the sorter should see every tomato passing before him. This means that they must not be fed to the belt in a layer more than one tomato deep.

In general we have little criticism to make of sorting methods. By far the bulk of our pack was well washed and sorted. The quality of that pack should insure a profitable sale. Another year we shall demand more of the canners than in years past; not because we want it particularly, but because the best interests of the business demand it.

We shall require all tomatoes to be washed in running water, that all toilets must be sanitary, convenient and cleanly, that clean towels and soap must always be available, that sanitary drinking fountains must be provided. We shall not allow the use of common drinking cups.

We urge all canners to so revise their contracts that growers will understand more clearly than now that unsound fruit and vegetables will under no circumstances be accepted. What we may be able to do in helping the canner to control the quality of the raw materials which comes to his platform we shall do, but we cannot go into the fields nor can we station inspectors at the factory.

A report of the condition of factories visited follows:

#### ACTON—

*Acton Produce Company.*—This is a small hand-pack tomato factory, operated for the first time this year by this company. The frame building is in fair condition; board floors good. Sanitary toilets and wash and rest rooms must be installed before another year and better facilities employed for washing product. "Fair."

#### ARCADIA—

*Arcadia Canning Company.*—Cans tomatoes and makes tomato catsup from skins and cores and packs same in barrels. Frame building in fair condition except the floor, which is poor. The inspector orders a new floor installed before next year's pack. Likewise, sanitary toilets, rest and wash rooms. Otherwise, "Fair."

#### ATLANTA—

*Atlanta Canning Company.*—Tomatoes and tomato pulp, made from skins and cares, are the products packed by this company. The work is done in a good frame building with good concrete floors. The toilets in the yard were found to be in bad condition. The company promises to install wash rooms, rest rooms and sanitary toilets before their next run. "Fair."

#### AUSTIN—

*Star Canning Company.*—The inspector's report on this company discloses very unsatisfactory conditions. The building is poor, the floors are

bad, the toilets are not sanitary, and are in the yard; no wash or rest rooms are provided, the product is not well washed and the place is generally dilapidated. Unless radical improvements in building, equipment and management are made this factory cannot hope to operate hereafter. The rating is "Poor."

*J. S. Morgan & Son.*—This factory operates the year round and does a general packing business. Good brick buildings, concrete floors, flush toilets and wash and rest rooms are provided. Improvements for next year are under way. "Good."

#### BRAZIL—

*Mullen-Blackledge-Nellis Company.*—Catsup is the product packed by this company. The buildings are good, the equipment is up-to-date and the sanitary conditions are excellent. These conditions, together with a splendid spirit and an intelligent management entitles this plant to the grade of "Excellent."

#### BROWNSBURG—

*Brownsburg Canning Company.*—This is a branch of the Ladoga factory. The building is in poor condition, the board floors are rated fair, the toilets are in the yard and found to be bad, the whitewash on ceiling was falling into cooking vats and the plant as a whole gets a rating of "Poor."

#### BROWNSTOWN, R. F. D.—

*Beech Grove Packing Company.*—This is a very small country plant, operated for the first time this year. It should not have started. The building is poor. There are no toilets. Tomatoes are not well washed. The refuse is fed to stock in close proximity to the plant. The place is poorly managed and kept in an unsanitary condition. "Poor."

#### BUNKER HILL—

*Bunker Hill Canning Company.*—This company packs tomatoes and tomato pulp in a bad frame building with poor board floors, and maintains unsanitary outside toilets. Wash and rest rooms are not provided. For the second season this factory receives a rating of "Poor."

#### CARMACK—

*S. H. Dragoo Canning Company.*—"Hardly fair" is the rating given the building in which this concern cans tomatoes. The floor is of concrete, and is good. Outside toilets are poor and no wash or rest rooms are provided. The washing and scalding is not satisfactory. The plant is scarcely entitled a grade of "Fair."

#### CLARKS HILL—

*Franklin McVcagh.*—Tomatoes and tomato pulp are packed here, the pulp being made from whole fruit. The building is a fine frame with a good cement floor. Wash and rest rooms are provided, but the toilets are in the yard and fairly well kept. The inspector gives this place a score of "Fair."

#### COVINGTON—

*H. E. Schrid.*—Tomatoes and peas are packed by this canner. He operates in a fair frame building having a fair wood floor. The sewage disposal is not satisfactory and the toilet, in the yard, is poor. The

promise is made that these defects will be made before the pack of 1915. The score is "Fair."

**COLUMBIA CITY—**

*F. W. Vance Company.*—Fair frame building, cement floors, outside toilets, no wash or rest rooms, fair sewerage and ample water pressure fairly describes this plant, which packs tomatoes, catsup, chilli sauce and beans. "Fair."

**CRAWFORDSVILLE—**

*Van Camp Packing Company.*—Good frame and brick buildings, good concrete floors, sanitary toilets, satisfactory wash and rest rooms, plenty of water under pressure, careful cleaning, good organization tells the story which entitles this firm to the score of "Very Good."

**CROTHERSVILLE—**

*The Crothersville Canning Company.*—This factory has been practically rebuilt—changed from a very unsatisfactory plant to fairly satisfactory one. When sanitary toilets and wash and rest rooms are installed it will meet the complete approval of the inspection force. A general line of food products are packed. "Good."

*Rider Bros. Packing Company.*—This company has been making extensive improvements in their plant for the last year or two, and when their sanitary toilets, wash and rest rooms are installed, as they will be before the season of 1914 opens, the plant will be a very satisfactory one. A general packing business is conducted and the factory operates twelve months in the year. "Good."

**DALEVILLE—**

*Daleville Canning Company.*—Tomatoes and beans are packed by this company in a good concrete building with good concrete floors. Outside toilets are kept in fair condition. Wash rooms are provided for women, but not for men. When these two requirements are met the grade will be "Good."

**DEPUTY—**

*Deputy Canning Company.*—Tomatoes, only, packed by this company. The frame building is rated poor, the floors are poor, toilets, in the yard, are unsanitary, no wash or rest rooms are provided and the sewage disposal is unsatisfactory. Tomatoes are not well washed. The inspector's report carries the following foot note: "This plant should be rebuilt or stopped from packing after this season." "Poor."

**DUNCAN—**

*L. F. Kanabel.*—Small farm hand-pack for tomatoes and peaches. The building is of frame construction, in fair condition, but the concrete floor is bad, and a new floor has been ordered. The equipment is crude but considerable care is taken to handle the product in a sanitary way. "Fair."

**DUNREITH—**

*Farmer's Canning Company.*—Building, frame—good. Floor, concrete—good. Sanitary toilets. Wash rooms provided. Sanitary drinking fountains installed. This factory is rated "Good."



## ENGLISH—

*English Canning Company.*—This factory cans tomatoes and makes pulp in a fair frame building. The floors are part good and part poor. The company has promised to install concrete floors in the operating department before next season. When sanitary toilets and wash and rest rooms are provided the place will be entitled to a grade of "Good."

## EDINBURG—

*The Naomi Packing Company.*—Corn is packed at this plant. The frame and concrete building is in fair condition. The floors are board and concrete, in fairly good condition. Sanitary toilets, wash and rest rooms should be provided. "Fair."

## EDWARDSVILLE—

*J. F. Brown Home Company.*—This is a small farm hand-pack tomato plant in Floyd County. The equipment is crude but great care is taken throughout. Mr. Brown proposes to build a new plant before next packing season and go into the business on a large scale. "Fair."

## ELNORA—

*Elnora Packing Company.*—Frame building in fair condition. Board floor, fair. Toilets and yard fairly well kept. Wash and dressing-rooms are provided. The drainage at this place is difficult to handle because of the flat country surrounding. With this problem solved the tomato and tomato pulp product would be packed in a plant rated "Fair."

## ELWOOD—

*Hance Canning Company.*—No wash or dressing-rooms, bad toilets in the yard, and bad board floors gives this plant a score of "Bad" despite the fact that the frame building is in fair condition and concrete floor (what there is of it) is good. Tomatoes and tomato pulp are packed.

*Ferguson Canning Company.*—Tomatoes and tomato pulp. Frame building in good condition. Floors, concrete and board, fair. Toilets in yard are bad. Careful methods gives this plant a score of "Fair."

*Frazier Packing Company.*—Small vegetables, tomatoes and tomato pulp are packed by this company, which has remodeled the plant this year until the score has been raised to "Good." The brick and frame building is a good one, the cement floors are good and sanitary toilets have been installed, also wash and dressing-rooms.

## EVANSVILLE—

*The Indiana Canning Company.*—This is a good plant, recently built, of steel, brick, glass and concrete, equipped with sanitary toilets, wash and rest rooms. The only trouble with this plant this year arises from the fact that a new washer and scalding, guaranteed to thoroughly wash tomatoes did not do the work in a satisfactory manner. The management corrected the fault by throwing out the guaranteed equipment and installing efficient machinery. "Good."

## FAIRLAND—

*Libby, McNeil & Libby.*—Pulp only packed. Building frame, in fair condition. Floors, wood, fair. Toilets in yard are fair. No wash or dressing-rooms provided. "Fair."

**FAIRMOUNT—**

*T. A. Snider Preserving Company.*—Chili sauce and pulp plant. Good brick building, good concrete floors, sanitary inside toilets, satisfactory wash and dressing-rooms. "Good."

**FRANKFORT—**

*Frankfort Canning Company.*—Corn and tomatoes. The building is a fair frame, with poor board floors. The toilets are sanitary and wash and dressing-rooms are provided. "Fair."

**FRANKLIN—**

*Grafton Johnson.*—When sanitary toilets, wash and dressing-rooms are provided this plant, which packs corn and peas, will receive a higher score. It is now rated as "Fair."

**FREETOWN—**

*Rider Packing Company.*—A branch plant built this year by Rider Bros. of Crothersville. It reflects credit on the proprietors, who will provide the one thing lacking—sanitary toilets, wash and dressing-rooms. "Good."

**FORT WAYNE—**

*D. L. Sears & Company.*—Pickles and tomatoes packed. Good brick building, good board floors, sanitary toilets. Wash and rest rooms are not provided. Satisfactory sewerage. "Good."

**GASTON—**

*Gaston Canning Company.*—A good frame building with a good concrete floor houses the business of this company, where tomatoes, tomato pulp and peas are packed. The toilet, facilities for washing and dress and the sewerage are not quite satisfactory. The score, as a result of these shortcomings, is only "Fair."

**GREENTOWN—**

*Greentown Canning & Ice Mfg. Company.*—This company packs tomatoes, pulp and small vegetables. Their building is frame and iron, in good condition. The floors are concrete and good. Inside sanitary toilets, wash and dressing-rooms are provided. "Good."

**HAMMOND—**

*Reid-Murdock Company.*—A general line of fruits, vegetables and condiments are packed by this concern in a good brick building, with good light and ventilation and good floors. This plant will be further improved by the reinstallation of the toilet system in a more desirable location. "Good."

**HARRISON—**

*T. A. Snider Preserving Company.*—This is not a desirable plant and is not well conducted, in that tomatoes are not well washed, toilets are not satisfactory, the floors are not good and the drainage is not efficient. Tomato pulp is packed in five-gallon cans—the only product.

**HENRYVILLE—**

*Jefferson Canning Company.*—This is a branch of the Jeffersonville Canning Company. It is located in a basement, making ideal sewage condi-

tions impossible; toilets in the yard were in bad condition and unscreened. The building is of frame construction, in fair condition and the board floors are fairly well kept. Efficient superintendence and watchful care would make this plant better than "Poor."

#### INDIANAPOLIS—

*J. H. Amt Company.*—This company packs small vegetables in a good frame building having fair wood and cement floors. The plant is not connected with the city sewer and the toilets are in the yard. No wash or rest rooms are provided. With these unsatisfactory environments the work is done with so much care that the inspector gives the plant a score of "Fair."

*Columbia Conserve Company.*—Tomatoes and tomato products are packed by this plant in a good brick building with good concrete floors and city sewerage connection. Sanitary toilets are provided and wash and rest rooms have been installed. The place scores "Fair."

*Hagelskamp & Haverskamp.*—Tomatoes and small vegetables are packed by this company. Building, brick, good. Floors concrete, good. City sewerage. Sanitary toilets. Wash and rest rooms. Ventilation insufficient. "Fair."

*W. D. Huffman Company.*—Pickles, small vegetables and condiments are the products of this concern. The building is of brick, in fair condition. Floors are of wood and cement and are likewise fair. The plant is connected with the city sewer. Sanitary toilets and wash rooms are provided. Score, "Fair."

*Schnull & Company.*—This company is operating in a good, new building, built in such a way that it is easy to keep the place in a sanitary condition at all times. A general line of food products are packed. "Good."

*Van Camp Packing Company.*—Tomatoes and small vegetables packed. Brick building in good condition. Floors, wood and cement, in good condition. City sewer connection. Sanitary toilets and wash and dressing-rooms provided. "Fair."

#### JEFFERSONVILLE—

*Jeffersonville Canning Company.*—New brick building with concrete floors, packing pork and beans, hominy and kraut, operating the entire year under good sanitary conditions. "Good."

#### KENNARD—

*Kennard Canning Company.*—This company has raised its grade by the installation of sanitary toilets and greater care in washing and handling products. "Good."

#### KNIGHTSTOWN—

*Knightstown Canning Company.*—Tomatoes, only, packed. The building is frame, in fair condition. Board floors, fair. Outside toilets for men, in fair condition. Sanitary toilets in building for women. Score "Fair."

#### KOKOMO—

*Kokomo Canning Company.*—This factory packs tomatoes, corn, peas and catsup. The building is of frame and brick construction, in fair con-

dition. The floors are of board and cement, in fair condition. Inside sanitary toilets are provided as are, also, wash and rest rooms. Connection made with the city sewer. Rating, "Fair."

*Sailor Packing Company.*—A good frame building with good concrete floors and city sewerage connection fairly covers the main features of this plant, which cans tomatoes and peas. But they maintain bad toilets in the yard and do not provide wash or rest rooms. These deficiencies, however, they promise will be corrected before next season. The score is now "Fair."

#### LADOGA—

*Ladoga Canning Company.*—New floors throughout the building are ordered for this plant, which packs corn, tomatoes and pumpkins. The frame building is in fair condition and new toilets have been installed and wash and rest rooms are provided. Present score, "Fair."

#### LAFAYETTE—

*H. J. Heinz Company.*—Pulp, only, packed. The building is brick, and good. Toilets, in yard, are well kept. Wash and rest rooms are not provided. "Good."

#### LEOTA—

*Austin Canning Company.*—Branch plant of J. D. Morgan & Son. The plant is to be rebuilt next year. So many unsatisfactory conditions exist that the score must now be "Poor."

#### LEWISVILLE—

*Lewisville Canning Company.*—This plant was visited by the inspector September 1st, when a score of "Fair" was given. September 18 the same inspector visited the place and gave a rating of "Poor," and made the notation "not in as good condition as first visit." Unsatisfactory disposal of waste, unsatisfactory toilets, lack of wash and rest rooms and careless management accounts for the low grade.

#### LEXINGTON—

*Lexington Canning Company.*—Toilet conditions are not satisfactory at this plant. Better facilities for washing and scalding are needed and wash and rest rooms are wanting. Despite these deficiencies the care exercised in handling the products merits a grade of "Fair."

#### LITTLE YORK—

*Little York Canning Company.*—This plant is a small country plant and is not well equipped or well managed. The inspector's report says, "everything in poor condition except the toilet."

#### LISBON—

*Noble County Canning Company.*—Tomato factory. Fair frame building with fair board floors. Toilets in yard and poor. No wash or rest rooms. "Fair to poor."

#### MADISON—

*T. A. Snider Preserving Company.*—Tomato pulp and catsup packed in a fair frame building with fair board and concrete floors. The drainage

is satisfactory and sanitary inside toilets and wash rooms are provided. The plant is rated as "Fair."

**MARTINSVILLE—**

*Van Camp Packing Company.*—This is a branch of the Indianapolis Van Camp plant. The building is a good frame with good concrete floors and city sewer connection. Sanitary toilets and wash rooms are being installed. Tomatoes, pulp and vegetables are packed. "Good."

**MARYSVILLE—**

*Southern Indiana Canning Company.*—The building in which this co-operative concern packs tomatoes is of frame construction, not well built but in fair condition. The floors are of board and concrete—the first being only fair while the latter is good. The toilets, in the yard, are only a makeshift and in bad condition. The drainage is fair considering the location, but the plant is not entitled to a grade better than "Poor to fair."

**MEDORA—**

*Medora Canning Company.*—This is an ideal country plant with good building, good concrete floors throughout, splendid toilets and wash rooms and satisfactory drainage. Cannery desiring to build or remodel should see this plant. "Good."

**MUNCIE—**

*Butterfield Canning Company.*—Does a general packing business. Has a good building made of concrete blocks. The floor is also of concrete. When sanitary toilets and wash and dressing-rooms are provided the plant will be very satisfactory. The grade is "Good."

*R. S. Reed.*—Good concrete building and good concrete floors house the operations of this plant, which packs beans and tomatoes. The drainage is fairly satisfactory but the toilets are not. Wash and rest rooms are not provided. "Fair."

**NABBS—**

*Indiana Tomato Seed Company, Grant Bros.*—Fair frame and iron building with fair wood and concrete floors. The drainage is fair, but the toilets are poor. No wash or rest rooms are provided. Water supply a problem. Catsup is manufactured, in which benzoate of soda is used. "Fair."

**NEW CASTLE—**

*The Scioto Canning Company.*—A branch plant of a Circleville, Ohio, concern, which packs tomatoes only. The building is a fair frame with a fair floor of boards. The men's toilet in the yard was bad. Toilet for women, in the building, was good. Dressing-room for women is provided. "Fair."

**NORLESVILLE—**

*The Standard Canning Company.*—Wash rooms are provided at this plant, but the toilets are in the yard and only fairly well kept. The sewage is disposed of by the tile drain. The building is a frame structure, in fair

condition. The floors are of cement and boards and are fair. Corn, tomatoes and peas are packed. "Fair."

**OX VALLEY—**

*Ox Valley Canning Company.*—This plant was condemned in 1913 and should not have operated this year. It has nothing to recommend it as a food producing plant and if it attempts to pack tomatoes next season the output will be seized, unless radical improvements are made. "Poor."

**PAOLI—**

*Paoli Fruit Produce Company.*—Tomato pulp only. Product packed in tin and glass. Building is concrete, brick, steel and stone and is sanitary throughout. This company spends large sums in experiments, keeping two chemists at work all the time. They are pioneers in a number of innovations. Among them are the tank-holding system for whole tomatoes, the jacketed vacuum cooker and the glass jar for hot pulp. Every packer who is on the outlook for the latest and best equipment, processes and results should visit and study this plant. "Excellent."

**PATRIOT, R. F. D.—**

*Wm. Bunger.*—This is a small farm factory where the equipment is crude. The work, however, is done in a careful and cleanly manner, and the place merits a grade of "Fair."

**PEKIN—**

*Pekin Canning Company.*—This plant is very unsatisfactory because of poor floors, bad sewerage and inefficient equipment for washing tomatoes. If it is operated another year, the place must be made new. It is now "Poor."

**PETERSBURG—**

*Petersburg Sanitary Canning Company.*—This plant, operated only two years, is to be remodeled, enlarged and improved. It is now a good plant, except for one thing—the cash carrier system for conveying tomatoes through the process of washing, scalding and sorting is not satisfactory, in that it does not wash the tomatoes well. The grade is "Fair."

**PERU—**

*Peru Canning Company.*—General food packers. Have a fair frame building. Floor is of board with concrete basin which catches all water. Sanitary toilets and good wash and rest rooms are provided. "Good."

**PIERCETON—**

*Reid-Murdock Company.*—Pack pickles and catsup in a building constructed of concrete blocks and wood. The floors are good. Toilets are in the building and are fair. The company will build a new factory for the season of 1915. "Good."

**PLAINFIELD—**

*Van Camp Packing Company.*—Tomatoes packed in good frame building with good board floors. The toilet arrangements are not now satisfactory, but sanitary closets and ample wash and dressing-rooms will be installed before the next canning season opens. "Fair."

**PLAINVILLE—**

*Plainville Canning Company.*—This company has a well equipped factory housed in a good frame building with good concrete floors. They have installed sanitary toilets and exercise considerable care in handling their product. Tomatoes, tomato pulp and pumpkins are packed. "Good."

**PLYMOUTH—**

*Plymouth Canning Company.*—In a fair frame building with good wood floors this company packs tomatoes, pumpkins and corn. Their drainage is not good, the toilets are in the yard and are not well kept and wash and rest rooms are not provided. But sufficient care is exercised in handling the product to entitle the plant to be graded as "Fair."

**PRINCETON—**

*Princeton Canning Company.*—Tomatoes, tomato pulp and pumpkins are packed by this company in a fair frame building with good board floors. Fair flush toilets were installed this year but no wash or dressing-rooms. Watchful management gives to this plant a score of "Fair."

**ROCHESTER—**

*Rochester Canning Company.*—Building, cement blocks and wood, good condition. Floors, concrete, good. Toilets, good. Wash and rest rooms provided. City sewer connection. Grade, "Good."

**SARATOGA—**

*Warren & Harshman Canning Company.*—These people do a general packing business in a good frame building with fair board floors. Toilets are outside and not well kept, but wash rooms are provided. This plant is entitled to a grade of "Fair."

**SCOTTSBURG—**

*Scottsburg Canning Company.*—Does a general food packing business and is operated by J. D. Morgan & Son, of Austin. The work is done in a fair frame building with good concrete floors. Sanitary toilets and wash and dressing-rooms are provided and the drainage is satisfactory. Additional improvements will be made this year. "Good."

**SEYMOUR—**

*Seymour Canning Company.*—Sanitary toilets and wash and rest rooms are needed at this factory. These will be installed next year. Likewise better equipment for washing tomatoes. The building is in fair condition, the floors being good and well kept. Tomatoes and tomato pulp. "Fair."

**SHELBYVILLE—**

*Grafton Johnson.*—Corn, only, packed at this factory. The building is of frame construction, in fair condition. The floors are board, with concrete below. The sewerage is satisfactory. The management proposes to build sanitary toilets and wash rooms next year. "Fair."

**SHARPSVILLE—**

*Sharpsville Canning Company.*—Tomatoes, pulp and corn. Good concrete floors, good drainage. Good flush toilets. Good dressing-rooms. Good management and good spirit. "Good."

**SHIRLEY—**

*Shirley Canning Company.*—Tomatoes are packed at this plant in a good frame building with good concrete floors. The company promises to build flush toilets and satisfactory wash and dressing-rooms before packing season comes again. "Fair."

**SULLIVAN—**

*Gonter Packing Company.*—This is a new factory and was not entirely completed before the packing season opened. The building is a good frame with concrete floors. The sewerage is satisfactory. When the plans of the proprietors are completed the place will be "Good."

**SPICELAND—**

*Citizens Canning Company.*—Tomatoes only canned here. Good frame building with good concrete floor. Outside toilets are maintained in fair condition and dressing room for women is provided. The sewage disposal is satisfactory. "Fair."

**STRAUGHN—**

*S. H. Murphy & Company.*—Tomatoes and tomato pulp are the products of this company. The building is constructed of wood, sided with iron. The floors are of concrete, and are good. Sanitary toilets are provided for women, but the ones for the men are in the yard and only fairly well kept. Satisfactory washing and dressing-rooms are in use. "Fair."

**SWAYZEE—**

*Swayzee Canning Company.*—This company has improved its plant from last year by the installation of a concrete floor. But there is much remaining to be done. The toilets are in the yard, no wash or dressing-rooms are provided and the drainage is not satisfactory. The score is "Fair to poor."

**TELL CITY—**

*Tell City Canning Company.*—This plant has a good sewerage disposal and is well managed. The place is kept clean by lavish use of water, but the toilet arrangements and the facilities for washing and scalding the product (tomatoes) is unsatisfactory. Promises are made to correct these deficiencies before next packing season. "Fair."

**TERRE HAUTE—**

*London Packing Company.*—Tomato catsup and chili sauce. A good brick building with good concrete floors, city sewerage, splendid washing equipment, excellent toilets, wash and dressing-rooms under constant and efficient supervision, intelligent management and watchful care entitles this plant to a grade of "Good."

**TIPTON—**

*Fame Canning Company.*—General food packers. The building, frame, is in good condition. The floors are of board and cement and are also in good condition. City sewerage takes care of the refuse. The company will install wash and dressing-rooms and flush toilets before next year's pack. "Fair."



*T. A. Snider Preserving Company.*—Make catsup in a good brick building with good concrete floors. To install wash and dressing-rooms and flush toilets before pack of 1915. "Fair."

UNDERWOOD—

*Hoagland Bros. General Packers.*—A part of the building used by this firm—the storage rooms—are in splendid condition, but the operating rooms are very unsatisfactory. However, the plant is to be rebuilt and modernized and sanitary toilets, wash and rest rooms installed. It now grades "Poor."

VALLONIA—

*Vallonia Canning Company.*—This is a well kept country plant, one of the very best co-operative plants in the State. While the toilets are in the yard they are well kept and well screened. Flush toilets, however, should be provided. Wash and rest rooms are in use. "Good."

VIENNA—

*Vienna Canning Company.*—This is a splendid new tomato factory which takes the place of an old one burned last year. It is up-to-date in every particular. It is a country plant, operated by farmers, and should be visited by all the small packers in the State. The building is a substantial frame with good concrete floors. A tile drain carries away the refuse. Flush toilets and good wash and rest rooms have been installed. A conscientious management keeps the place clean. "Good."

VINCENNES—

*Dyer Packing Co., General Packers.*—The building is of frame and brick, and is in fair condition. The floors are board and concrete—the former fair while the latter are good. The city sewer receives the refuse. Toilets in the yard are poor. Flush toilets, wash and dressing-rooms will be provided before season of 1915. "Fair."

*Old Vincennes Preserving Company.*—This concern has been run after a haphazard fashion but a change in the management indicates better methods. The building is not suited to its present use, but by the exercise of extreme care fair sanitary conditions may be maintained. Almost all the work is done by hand. Sanitary toilets are provided and the city sewer is used. "Fair to poor."

WALKERTON—

*Atwood Bros. Pickle Factory.*—Brick and frame building, in good condition. Board floors, in poor condition. Must build sanitary toilets, wash and dressing-room. "Poor."

WABASH—

*Wabash Canning Company.*—General packers. Good stone building. Good concrete floors. Satisfactory sewerage. Flush toilets and wash and rest rooms must be installed. Score, "Good."

*Cruckshank Bros. Company.*—Pickles and sauerkraut. Fair brick building, with fair cement and board floors. Toilets in building but not satisfactory. Wash rooms provided. Sewage disposal satisfactory. "Fair."

## WASHINGTON—

*T. A. Snider Preserving Company.*—Tomato pulp. Frame and iron building, in poor condition. Good concrete floors. After installing a twelve inch sewer, flush toilets, shower baths, rest and wash rooms the company operated five days this year and, because of poor crop, closed the factory. "Fair."

## WESTFIELD—

*George Van Camp & Sons.*—General food packers. A fair frame building with a fair board floor, carefully kept, good flush toilets and fair wash rooms are provided. The refuse is carried away in an open drain to surface ditch. The place is operated in a careless manner and is not kept clean. Last year the score was "lower than Fair." This year it is "Poor." If this concern does not get busy at once and make radical changes in management and methods, the plant cannot be operated next year.

## WINDFALL—

*Royal Packing Company.*—Tomatoes and peas. This company does business in a good brick and concrete building with good concrete floors. The sewerage is satisfactory. Good flush toilets have been installed and wash and dressing-rooms are provided. The condition of the yard, which was bad, draws a score lower than the plant would otherwise merit. "Fair."

## WESTPHALIA—

*Westphalia Sanitary Canning Company.*—This is a 1914 plant built in a Knox County village and gives promise of doing a good business in a clean way. However, sanitary toilets and wash rooms have not yet been provided. With them, the score will be "Good."

## WORTHINGTON—

*Worthington Canning Company.*—Tomatoes and pumpkins are packed here. The building is of frame construction, in poor condition. The floors are board, concrete and dirt. The toilets are in the yard and are dilapidated and filthy. The receiving porch is laid on the ground and is rotten. The refuse is dumped in the yard to rot. The place is not kept clean and the manager does not seem to appreciate the importance of sanitary food production. The factory has not been in operation for a number of years until this year, when Allen Jennings opened it for a small pack. It is now condemned. "Bad."

## YORKTOWN—

*Yorktown Canning Company.*—Can tomatoes. Brick building, in fair condition. Board floors, fair. Sewerage disposal fairly satisfactory, but sanitary toilets and wash rooms must be installed. "Fair."

## A SANITARY SURVEY OF THE BOTTLING WORKS OPERATING IN INDIANA.

In nearly every community one or more bottling houses are engaged in the preparation and sale of bottled soft drinks commonly known as sodas or pops. In years past these places have been inspected from time to time for the purpose of determining their sanitary condition, and notices to bottlers have been issued for the purpose of improving trade customs. The first of these circulars advised bottlers to discontinue the use of saccharin and preservatives. Later circulars have discussed the use of proper labels and suggested marking the contents in compliance with the Weights and Measures Law.

In the course of our work with bottlers we have noted constant improvement both in methods of manufacture and the conditions under which the business is carried on. The Indiana Bottlers' Association has co-operated heartily with the inspectors and in a number of instances has assisted in the prosecutions of violators of the law.

In order to determine the condition of the bottling industry and to get in close touch with individual bottlers we have recently made a rather complete survey of all establishments operating in the State. This survey, made during the months of July, August and September, included a visit to and inspection of one hundred and five bottling works located in every part of the State. The inspector reports that in general the sanitary conditions were good; that the bottlers were fully informed as to the various laws under which they operated and were trying so to conduct their business as to place them above criticism. Although no establishment was found so ideal as to warrant the grade of excellent, 45 places were rated as good and 57 were entitled to the grade of fair. But three places were poor, and in no instance was a plant reported as bad. In comparison with other food manufacturing establishments these figures show that the bottlers of the State have been diligent in improving sanitary conditions and adopting modern and sanitary methods of work.

All places visited were equipped with suitable facilities for washing bottles; all the establishments had an adequate supply of pure water. In several instances analyses were made of waters for the purpose of determining their quality.

Five hundred and forty-nine samples of bottled pops or sodas were purchased at the plants visited and sent into the laboratory for analysis. Of this number 22 were preserved with benzoate of

soda. In nearly every instance the preservative was present in so-called orange soda. Seven samples contained salicylic acid. These samples were the so-called root beer preparations and it is probable that the salicylic acid was not present as a preservative. Seventeen samples were sweetened with saccharin, and in these cases action has been brought against the proprietors for violation of the rule of the State Board of Health which prohibits the use of saccharin in food products. These seventeen samples were collected at four different establishments.

Seventy-one of the samples gave the net volume of contents as 7 ounces; 3 as  $7\frac{1}{2}$  ounces and 39 as 8 ounces. Thirty-one of the samples were not properly labeled, no statement appearing on the bottle to the effect that the product was artificially colored or flavored or otherwise made in imitation of the genuine article.

Eleven samples were contained in bottles closed by the so-called Hutchison stopper, a stopper which is pushed down into the bottle instead of being withdrawn when opened. Such a stopper allows the accumulation of dust and dirt in the neck of the bottle and is unsanitary in the extreme and its use has been forbidden.

In general the bottling industry has been so improved that it now stands on a par with other food industries, and with the few exceptions above noted the bottlers of the State are honestly endeavoring to obey the laws which protect the consumer and make for better business.

## A STUDY OF FRUIT JAR CAPS.

GAIL MIERS STAPP.

For years the Mason fruit jar has held first place as a container for many classes of preserved foods. Different caps are employed. The most common type has been a zinc cap with glass lining which made a perfect closure by pressing tightly on a rubber ring. Later types have varied the method of closure by placing the rubber ring on the edge of the glass neck in such a way that the closure was made not with the edge of the cap but by the inside glass lining. In order to determine the relative merits of the old and the new style of cap, especially with reference to the solution of metal and perfect seal, we have made the experiments which are outlined below:

Fourteen clean Mason jars were selected, one-half of which were sealed with White Crown caps, and the other half with Mason caps. Into each jar sealed with the White Crown caps was put 100 c.c. of

one of the following solutions:  $\frac{1}{2}\%$   $\text{H}_3\text{PO}_4$ ; 1%  $\text{H}_3\text{PO}_4$ ;  $\frac{1}{2}\%$  tartaric acid;  $\frac{1}{2}\%$  acetic acid; 1% acetic acid;  $\frac{1}{2}\%$   $\text{HNO}_3$ ; and 1%  $\text{HNO}_3$ . The same was done with the jars sealed with Mason caps. These jars were inverted and allowed to stand for six months. At the end of that period the following things were noted:

Condition of the cap, loss in volume, if solution was clear, or turbid, and if zinc was present. The results are shown in the following tables:

WHITE CROWN CAPS.

Acid.	Condition of Cap.	Loss in Volume.	Solution.	Zinc.
$\frac{1}{2}\%$ $\text{H}_3\text{PO}_4$ .....	No corrosion.....	No.....	Clear.....	None.
1% $\text{H}_3\text{PO}_4$ .....	No corrosion.....	No.....	Clear.....	None.
$\frac{1}{2}\%$ Tartaric.....	No corrosion.....	No.....	Clear.....	None.
$\frac{1}{2}\%$ Acetic.....	No corrosion.....	No.....	Clear.....	None.
1% Acetic.....	No corrosion.....	No.....	Clear.....	None.
$\frac{1}{2}\%$ $\text{HNO}_3$ .....	Outer rim slightly corroded.....	No.....	Clear.....	None.
1% $\text{HNO}_3$ .....	Outer rim slightly corroded.....	No.....	Clear.....	None.

MASON CAPS.

Acid.	Condition of Cap.	Loss in Volume.	Solution.	Zinc.
$\frac{1}{2}\%$ $\text{H}_3\text{PO}_4$ .....	Corroded.....	About $\frac{1}{4}$ .....	Turbid.....	+
1% $\text{H}_3\text{PO}_4$ .....	Badly corroded.....	Completely evaporated.		
$\frac{1}{2}\%$ Tartaric.....	Slightly corroded.....	About $\frac{1}{4}$ .....	Clear.....	+
$\frac{1}{2}\%$ Acetic.....	Slightly corroded.....	No.....	Clear.....	+
1% Acetic.....	Badly corroded.....	Completely evaporated.		
$\frac{1}{2}\%$ $\text{HNO}_3$ .....	Badly corroded.....	No.....	Clear.....	+
1% $\text{HNO}_3$ .....	Badly corroded.....	Slight loss.....	Turbid.....	+

The following results from the experiment were noted:

1. On five out of seven jars, the White Crown caps were in perfect condition. All of the Mason caps were corroded.

2. There was no loss in volume in the jars sealed with White Crown caps. In five of the seven jars sealed with Mason caps, there was a decided loss in volume.

3. The solution in each of the jars sealed with White Crown caps was clear, while in two of the jars sealed with Mason caps the solution was decidedly turbid.

4. Zinc was present in each of the solutions in the jars sealed with Mason caps.

The following conclusions were drawn: The White Crown cap is superior to the Mason cap—(1) it does not permit the contents of the jar to come in contact with any metal; (2) it is more sanitary in that it is more easily cleaned; and (3) it permits a tighter seal.

## THE EFFECT OF BREAD WRAPPING ON THE CHEMICAL COMPOSITION OF THE LOAF.

By H. E. BARNARD and H. E. BISHOP.

With the passage of sanitary food legislation and the appreciation by both manufacturers and consumers that the production of clean food is even more important than the prevention of sophisticated food, has arisen the demand for the protection of bread and bakery products between the oven and the home. Those who are familiar with the facts admit, without question, that the loaf as it leaves the oven is practically sterile both in the interior of the loaf and on the surface.

In the process of baking, the interior of a loaf of bread is raised to nearly 100°C. and at the same time is filled with moist steam, while the outside is subjected to a temperature of about 200°C. Under such conditions yeast cannot live. Most bacteria will not resist prolonged steam heat and all bacteria on the outside of the loaf are unquestionably<sup>1</sup> destroyed.

Roussel<sup>2</sup> has observed that during baking the temperature of the interior of the loaf reaches 101-103°C., and that of the crust 125-140°C. This temperature is somewhat higher than that reported by Mallett,<sup>3</sup> who found that the interior of the loaf did not get higher than 100°C. and usually ran lower, even as low as 92°C. Likewise in a series of determinations of the temperature of the interior of the loaf reported in the *Journal de Pharmacie et de Chimie*<sup>4</sup> it is shown that the temperature of the interior of the loaf as it leaves the oven is between 97° and 100° even after the baking has continued forty minutes. These temperatures are deemed sufficiently high to kill pathogenic bacteria but not as a rule the spores, except in the crust.

Numerous authors have pointed out that unprotected bread acquires a bacterial flora frequently very extensive, both as to variety and number.

Sadtler, in his report on bread wrapping to the National Association of Master Bakers, shows that the colon bacillus was present on the surface of seventeen per cent. of unwrapped bread samples examined and that in addition to this number twelve and a half per cent. showed the presence of such large numbers of bacteria as to be classed as of doubtful quality. On the other hand, samples of

<sup>1</sup> Golden, *Proc. Ind. Acad. Sci.*, 1892, 46.

<sup>2</sup> J. Roussel, *Univ. Paris, Rev. Intend. mil.*, 20, 122-31.

<sup>3</sup> *Chemical News*, Nos. 1515-1518.

<sup>4</sup> *Journal de Pharmacie et de Chimie*, Series 5, 27, p. 16.

wrapped bread showed relatively low bacterial counts and the presence of no pathogenic organisms.

In addition to the necessity for keeping bread in a condition suitable for food, it must be protected from the development of so-called bread diseases caused by microorganisms, all of which, with the exception of rosy bread, are of exterior origin. The spores or bacteria get into fissures in the crust and grow from thence into the crumb where they may multiply with extraordinary rapidity. It is true that the ordinary bakers' bread is rarely subject to disease since it is consumed before moulds or bacteria have an opportunity to grow within the loaf.

The common green mould, *Penicillium glaucum*, the spores of which are ever present in the air, sometimes develops quickly on the crust of bread which is placed in damp and mouldy receptacles. As in the case of bacteria, the best precaution against mould fungi is to place the bread at once on removing it from the oven in a cool, dry and airy place and keep it there.<sup>1</sup>

Because of the desire of the consumer for fresh bread, that is, bread having a peculiar quality of flavor and texture observed in bread recently drawn from the oven, bakers follow the practice of returning to the shop all bread left unsold at the end of a period varying from one to two days. Such bread is called second day bread and is described as stale or half stale although as a matter of fact, it is still entirely palatable and nutritious.

When bread is returned to the bakeshop it loses its value for human food and is finally disposed of as stock food, or in some instances, it is in part converted by suitable methods into sugars which are incorporated in the doughs for other bakings.

The loss to the baker occasioned by the return of loaves is so great that a study of the reasons producing staleness or half staleness, and methods by which this condition may be avoided is of importance.

Katz<sup>2</sup> has studied the change resulting in staleness, and has reached the conclusion that there exists within the crumb of bread a physico-chemical equilibrium; at a temperature between 50 and 100°C., normal fresh bread is the stable form, while at room temperature, 0 to 25°C., stale bread is the stable form. This observation is the more readily understood in the light of our present knowledge of colloidal chemistry, which has taught us that bread is a starch colloid, that is, that the starch granules composing the

<sup>1</sup> Stiegeler, "Pure Products," 3, 464.

<sup>2</sup> Zeit. für Elektrochem., 19, 206 and 663.

crumb are colloids which hold a considerable quantity of water in combination.

Birmbaum,<sup>1</sup> long before the development of the chemistry of colloids, called this condition "fixation" of the water. Fresh baked bread, as is shown in the accompanying charts, contains much more water in the interior than in the crust of the loaf. The interior crumb is in a perfect colloidal condition with a rather high moisture content, but as the bread grows old the ratio of the water content between crust and crumb is changed, the "fixation" water of the crumb leaving it to be absorbed by the relatively drier crust.

Boussingault,<sup>2</sup> studied the distribution of moisture and observed that by heating the crumb to 70°C., it became, in every respect, like fresh bread.

Bibra<sup>3</sup> confirmed Boussingault's observations but pointed out that when the water content falls below 30 per cent., heating does not suffice to remove the staleness. He observed that when the per cent. of water falls below 30 per cent. if the bread is immersed in water for a few seconds and then heated to about 80°C., it is then rendered fresh. Bibra, however, is inclined to regard the changes producing staleness as due to some change in the form in which the water is combined in the substance in the bread. Fresh bread, he suggests, contains water chiefly in the uncombined state, but on keeping, the moisture content gradually enters into chemical combination. As soon as this process is completed the bread is perfectly stale. Upon heating, however, the union of starch and gluten with the water is severed and the bread becomes fresh, provided sufficient water is present. This observation is of particular bearing on the practice of bread wrapping if it can be shown that the wrapped bread loses its moisture content more slowly than the bread which is not protected against evaporation.

Interesting as these theories are, the baker has not yet been able to utilize the suggestion that stale bread may be rejuvenated by heating, because of the fact that the restored freshness is lost rapidly and that bread so treated very shortly acquires its original staleness.

Other factors unquestionably enter into the development of staleness. It has always been noted that stale breads, especially rye and bran breads, develop an increasing acidity with age. The free acid invariably present in bread is for the most part a product of

<sup>1</sup> Birmbaum's "Das Brotbacken Braunschweig," 1878, p. 255.

<sup>2</sup> Boussingault, *Ann. chim. phys.*, [3] 36, 490.

<sup>3</sup> D. Getreidearten und das Biot.



fermentative action in the dough. The acid reaction is caused by two factors, free organic acids and acid potassium phosphate. The latter acidity results from the action of the free organic acid on the neutral phosphates contained in the flour. The organic acids present in bread are in part volatile as acetic and butyric acids and in part non-volatile as lactic and some of the higher fatty acids. Occasionally an increase of acidity takes place during the storing of bread which becomes slimy in consequence of the growth of microorganisms, the spores of which survive the heat of the bake oven.

This microorganism, known as *Bacillus mesentericus vulgaris* (Flügge) of the potato bacillus, is most commonly met with in bread rich in bran and having a high water content. The abnormally high acidity produced by this bacillus is hardly ever met with in white bread. Stiegeler<sup>1</sup> quotes Lehmann to show that the volatile acids, chiefly acetic, constitute about two-thirds of the total acids contained in bread. Lehmann proposes the following qualification with reference to the acidity of bread:

100 GRAMS OF THE FRESH CRUMB REQUIRE—

1 to 2 cc. Normal alkali.	Sweet loaf.
2 to 4 cc. Normal alkali.	Very slightly sour.
4 to 7 cc. Normal alkali.	Slightly sour.
7 to 10 cc. Normal alkali.	Fairly sour.
10 to 15 cc. Normal alkali.	Strongly acid.
15 to 20 cc. Normal alkali.	Excessively acid.

It is to the interest of the baker and of the consumer alike to protect bread properly until it is consumed. In recent years this has been attempted by the use of bread wrappers or paper prepared for the purpose in which the bread is wrapped before it leaves the bakery. The use of the bread wrapper has received general public approval and in some cities and states has been made the subject of legislation. Many bakers have found bread wrapping profitable both in the lessening of the loss due to stale bread and the increased approval of consumers, but on the other hand bakers have not viewed the adoption of the wrapper with favor, claiming that the use of the wrapper involves an additional cost for labor and wrapping material, the rearrangement of hours of labor at the bakery and further, that wrapped bread loses its flavor and becomes unpalatable more quickly than unwrapped bread. It is evident that if the wrapping of bread tends to injure the quality of the loaf the sanitary feature of the practice is not alone a sufficient

<sup>1</sup> Dr. H. Stiegeler, "Pure Products," 2, 183.

argument for wrapping, since undoubtedly other methods of protection may be employed to prevent bacterial infection.

A number of investigations have been made of the effect of wrapping upon bread. The authors have studied the loss of moisture in the wrapped and unwrapped loaf and noted organoleptically the change in odor, flavor and acidity and the growth of moulds.<sup>1</sup>

They observed that the ordinary bakers' loaf wrapped in paraffined paper retained its good condition for three, four and, in some cases, five days, while the unwrapped loaf became dry at the end of two days. The loaves in the porous paper wrapper dried out more rapidly than those wrapped in the paraffined paper but showed less tendency to sour. The wrapped Vienna and rye loaves lost their natural characteristics rapidly as the moisture in the center of the loaf became distributed throughout, thus injuring the flavor and texture of the crust which is considered the most desirable characteristic of such loaves.

Thomas<sup>2</sup> studied the practice of wrapping bread in paraffined paper, noting the condition of the loaf 18, 36, 60 and 108 hours after baking. The paper used was of such grade that the loaf was practically sealed from the air. The authors note that the loaves wrapped hot lost less moisture than those wrapped cool, and that they kept as well and were in better flavor and aroma. The unwrapped loaf lost moisture rapidly together with flavor and aroma. Another series indicated that the effect of placing the unwrapped loaf in a clean unclosed compartment was much the same as wrapping. It is further noted that the wrapping did not prevent the loaf from becoming stale after 36 or 48 hours.<sup>3</sup>

In the same experiments, White determined the acidity of the same loaves. His results are summarized as follows: Bread made under cleanly conditions from a good quality of flour and yeast does not grow acid whether wrapped or not, even after 108 hours. Bread wrapped while warm and bread wrapped while hot show an increase in the acidity of the inside portion of the loaf as compared with the crust. This increase amounts to 9 per cent. in the case of the hot wrapped bread.

The change of distribution of moisture is accompanied by the development of a different odor and flavor to which bakers have applied the phrase stale and half stale. When in such condition the

<sup>1</sup> Barnard and Bishop, Indiana State Board of Health, *Rep.* 1910, p. 324.

<sup>2</sup> Special Bulletin Food Department, Gov. Agr. Expt. Sta., North Dakota, Vol. I, No. 26 (1910) 212.

<sup>3</sup> White, Special Bulletin Food Dept., Govt. Agric. Expt. Station, North Dakota, Vol. 1, No. 26 (1910), p. 214.

modern taste is not so easily satisfied as with the fresh bread. Accompanying this change of moisture content are slight chemical changes in the composition of the bread, namely, in the proteids, sugars and acidity.

These facts have important bearing on the question of bread wrapping. It is claimed by bakers who object to the wrapping of bread<sup>1</sup> that when bread is kept in a close, warm, moist atmosphere from the time of baking or when new, it is far more likely to develop sourness and mould, than if stored where it may cool rapidly and lose any excess of moisture. The arresting of the passage of the moisture through the crumb, and the concentration of the moisture in the crust is in every way injurious to the latter, and the arresting of the so-called normal loss of moisture will as well injuriously affect the interior of the loaf. They claim that milk bread and sour dough bread spoil more rapidly if the moisture is shut in and acidity develops.

These observations, which have become a positive expression of the belief of bakers adverse to wrapping, may, we believe, be proved or disproved by chemical means, and in an endeavor to arrive at the facts, we have studied the composition of wrapped and unwrapped loaves kept under normal conditions for a period of days.

The bread was obtained from the bakeries within three or four hours after baking. By this time it had thoroughly cooled. During the preliminary work the different loaves were analyzed at once. When the study of the wrapped loaves began eleven loaves were taken for each set. Beginning on Monday, five loaves were wrapped and six were left unwrapped. One of the unwrapped loaves was analyzed on Monday. On Tuesday one unwrapped loaf and one wrapped loaf were examined. On Wednesday the second unwrapped and second wrapped loaf were analyzed. This procedure was followed through the week or until the whole set had been taken care of.

This plan gave us a series of loaves of bread that had been unwrapped 1, 2, 3, 4, 5, and 6 days each and a series of which had been wrapped 1, 2, 3, 4 and 5 days each.

Sets referred to as C, D, E, F, G and H were handled in this manner. For Sets I and J instead of analyzing a set of unwrapped loaves for every set of wrapped loaves we combined the series of wrapped loaves using 16 loaves instead of 11 loaves, six were left unwrapped, five wrapped in paraffin paper and five in a semi-porous paper. This required the analysis of three loaves each day instead of two.

<sup>1</sup> Sadtler, Report 16th Convention National Association of Master Bakers, 1913.

## NORMAL COMPOSITION OF FRESH BREADS.

The data at hand showing the normal composition of freshly baked bread is scanty. Most of the material available refers to foreign breads or breads not commonly baked in this country. We have, therefore, felt it desirable to begin the work by establishing the standard composition of freshly baked bread. The following factors have been determined: moisture, ash, proteid, total solids, soluble solids, starch, soluble carbohydrates and acidity as lactic acid.

## COMPOSITION OF BREADS STUDIED.

The breads examined were obtained at the local bakeries and the samples were part of their daily baking. An effort was made to select loaves as uniformly baked as possible. Only the regular brands were analyzed, no effort being made to cover the whole field of bakery products.

The first loaves examined (Charts Nos. 1, 2, 3, 6, 7) were of the straight dough variety, baked in single pans and of the following ingredients: cottolene, sugar, salt, yeast, flour, and water. The mixing and most of the handling were done by machinery. The sponge dough hearth bread (Chart No. 4) was made at the same bakery and contained salt, sugar, yeast, lard, flour and water.

In another set of experiments (Charts Nos. 8, 9, 10, 11) a somewhat different straight dough pan bread was used. This brand is baked as a double loaf. It is sold in a semiporous wrapper at ten cents. Its ingredients are the same as the loaves examined first (Charts Nos. 1, 2, 3, 6, 7) but as a different formula is used the two breads are very different in flavor.

The straight dough pan bread (Chart No. 5) was baked at another bakery. This sample contained malt extract, milk and cottonseed oil as well as the ordinary salt, sugar, yeast, flour and water.

The straight dough rye bread (Charts Nos. 12, 13, 14, 15) was made from a mixture of about 50 per cent. rye flour and 50 per cent. wheat flour together with salt and yeast. This gave a loaf of very much the same texture as the ordinary white loaf.

The sponge dough rye bread (Charts No. 16, 17) was made from a rye flour mixture containing about 50 per cent. rye. A portion of the dough from the day before was added, together with some fresh yeast to get the raising power. No shortening was used and salt only added to the mixture. The texture of the crumb was quite similar to the ordinary white loaf of bread.

The Vienna loaf (Charts Nos. 18, 19, 20) was a very light porous

loaf with the characteristic crust. It was made from a blended wheat flour with cottonseed oil, salt and yeast.

The Bohemian rye (Charts Nos. 21, 22, 23) was from the same shop as the Vienna bread. This rye was very different from the usual rye loaf. It was made from a black rye flour with about 5 per cent. wheat flour added. No shortening was used. The leavening agent was a mixture of sponge and a very little fresh yeast. A very small quantity of salt was added.

#### METHODS OF ANALYSIS.

One of the difficulties incident to this investigation was the taking of proper samples. Preliminary investigations determined the fact that ordinary methods of sampling were not practical since the loss of moisture during preparation was so excessive as to invalidate the analytical results. The following method of procedure was finally employed with success: A loaf was divided crosswise and the crust separated from the crumb by taking off the outer layer in a slice just thick enough to include the browned portion. The crust and crumb were then broken in large pieces and immediately dried to a water-free condition in an oven at a temperature of 98°C.

The drying, which was usually completed at the end of 12 hours, left the bread in a slightly browned, granular condition which was then reduced to a fine powder by grinding and passing through a forty mesh sieve. The prepared samples were then placed in tightly stoppered bottles from which the samples were taken for analysis after redrying for an hour to remove water taken up during the process of grinding.

The chemical methods employed were in general those found in *Bulletin 107*, Bureau of Chemistry, Department of Agriculture, together with modifications of some methods suggested by Jago.<sup>1</sup>

The moisture content was calculated from the loss in weight of the samples as they were prepared for grinding. This gave a very close approximation to the correct amount as the samples were large and the time between the time of cutting and weighing was nil.

The total proteids were calculated from the nitrogen determined by the Gunning modification of the Kjeldahl method upon a one gram sample of the dried crust or crumb using the factor 6.25.

The total carbohydrate content was determined upon a one-half gram sample by digesting for four hours in a ten per cent. hydrochloric acid solution and then determining the sugar by Fehling solution.

<sup>1</sup>Jago, W. and W. C., "The Technology of Bread Baking," 1911.

The ash was taken on a one gram sample by igniting at low redness over a free flame. The soluble factors were determined upon a solution of the crumb or crust prepared according to Jago on page 768 using 10 grams of the dry sample instead of 25 grams. The sample was added to 250 cc. of distilled water and shaken vigorously for five minutes, and then allowed to stand for 25 minutes, making 30 minutes in all. The clear portion was decanted into a filter without putting the insoluble portion on the filter.

The soluble proteid content was determined by evaporating 100 cc. of the above solution to small quantity directly in the Kjeldahl flask and then digesting as in the total proteid determination. The evaporation of 20 cc. of the solution gave the soluble solids.

Soluble carbohydrates were taken by heating 20 cc. of the solution, 30 cc. distilled water and 5 cc. concentrated hydrochloric at the boiling temperature for four hours and then determining the sugars with Fehling solution.

The acidity was determined by titrating 20 cc. of the solution with  $N/20$  sodium hydrate and multiplying by the factor 0.05625 which gave per cent. acidity as lactic acid.

The starch content was calculated by subtracting the soluble carbohydrate factor from the total carbohydrate factor and converting the result by the starch factor 0.9.

#### THE CHEMICAL DATA ON WRAPPED AND UNWRAPPED BREAD.

*Straight Dough Pan Bread.*—The moisture content of all the straight dough pan breads in the series dropped off uniformly both in the crust and crumb throughout the experiment as shown in Charts No. 29 to No. 36, inclusive. At the end of the sixth day the moisture content of the unwrapped loaf was a little higher than in the loaf wrapped in the semi-porous paper. In no case was there any evidence of transference of moisture from crumb to crust, the moisture content, as shown in the graphic curves (see Charts No. 24 to No. 27, inclusive), decreasing in the same proportion in the various loaves from day to day.

The total proteid content in all the loaves show no variation throughout the experiments.

The soluble proteid showed an increase on the third and fourth days in the case of the unwrapped and semi-porous paper wrapped loaves, and a sharp decrease on the third day in the loaf wrapped in the waxed paper. This decrease was followed on the fourth day by a decided increase in the soluble proteid content of the crust of the waxed paper loaf. After the fourth day the soluble proteid con-

tent fell off sharply until the end of the experiment. There is no evidence of appreciable change in the gluten content which would be manifested by an increase of soluble proteids except that observed in the case of the unwrapped and semi-porous paper wrapped loaves, and in these cases the change is not sufficiently great to warrant the drawing of definite conclusions.

The soluble solid contents do not vary throughout the experiments.

The soluble carbohydrate contents vary so irregularly as to be of no real value. An important fact to be noted is that such change as was observed takes place uniformly both in the crust and crumb.

The starch contents do not vary greatly throughout the experiment.

The acidity content dropped off markedly in the case of the unwrapped loaf on the second day and from that time continued without change until the sixth day.

The acidity of the loaf wrapped in semi-porous paper remained practically constant from the first to the sixth day. The acidity content of the waxed paper loaf decreased slightly on the third day and showed a slight increase in the crumb, on the fourth day followed by a decline at the end of the experiment. The ash content remained unchanged.

*Straight Dough Rye Bread.*—The moisture content in the unwrapped loaf on the first day after baking was, crust 26.4 per cent., crumb 40.4 per cent. The moisture content of both crust and crumb dropped off regularly until the sixth day when the respective contents were 12.5 per cent. and 32 per cent. A duplicate set of studies showed the moisture content as follows: crust 33.3 per cent., crumb 41.5 per cent. on the first day and 14.2 per cent. and 28.6 per cent. on the sixth day. The daily loss in moisture was more constant on this set than on the first set, although, as reference to the chart shows, the loss of moisture in crust and crumb paralleled each other throughout the experiment. The loaves wrapped in the semi-porous and paraffin paper contained the same moisture content at the beginning but lost water more slowly and at the end of the experiment were still relatively soft. No transference of moisture from crumb to crust is shown save in the loaves wrapped in the waxed paper where the moisture loss in the crumb was relatively greater on the fourth and fifth days than in the loaves wrapped in semi-porous paper.

The total proteid content calculated to a dry basis showed no variation throughout the experiments either in the unwrapped or wrapped loaves.

The soluble proteids varied slightly from day to day but neither the figures nor the plotted curves show so much uniformity of action. The increase in soluble proteids was greater in the case of the unwrapped and paraffined wrapped loaf and less in the semi-porous paper.

The soluble solids content varied but slightly throughout the experiments.

The soluble carbohydrate content in general showed a slight decline toward the end of the period. On the third day an increase in soluble carbohydrates was noted in the bread in the semi-porous wrapper. Reference to the chart shows graphically the close parallel existing between the composition of the crust and crumb.

The total starch content varied but little throughout the experiment, the difference noted being due more to the fact that each day a different loaf was analyzed than to any change in composition due to aging of the loaf.

The acidity content instead of increasing daily in the case of the unwrapped and waxed paper is lower on the second and third days, increasing very slightly on the fifth day. Almost no change is observed in the acidity of the loaves wrapped in semi-porous paper. The acidity of the crust and crumb, as shown by the graphic chart, parallel each other throughout the experiment.

The ash factors are of little value, the variation observed being due unquestionably to the difference in composition of different loaves from the same baking.

*Straight Dough Vienna Hearth.*—The unwrapped Vienna hearth bread showed a rapid decrease in moisture content, both in the crust and crumb, the loss in crumb moisture, however, being greater than in the case of the crust. The loaves wrapped in semi-porous paper showed a slight drop in the crumb and after the third day a slight relative increase in the crust, the moisture content of the crust, however, being the same at the end as at the beginning of the experiment. The moisture content of the waxed paper loaf showed a transference of moisture from crumb to crust on the second and third days, after that there being little change in composition.

The total proteid content showed no variation throughout the experiments.

The soluble proteid content on the third day showed an increase in the case of the unwrapped, but after that time a drop was observed. On the contrary, the soluble proteid content of the loaves wrapped in semi-porous and paraffin paper dropped uniformly both in the crumb and crust.



The soluble solid content remained unchanged through the experiments.

The soluble carbohydrates varied somewhat, the only uniformity of action being similarity of change in the crumb and crust.

The starch content remained nearly constant throughout the experiment, the difference noted being due to the fact that a different loaf was analyzed each day.

The lactic acid remained practically constant in the unwrapped loaf and in the waxed paper loaf. In the semi-porous wrapper, however, a slight increase was noted on the fifth and sixth days.

*Sponge Dough Bohemian Rye.*—The moisture content of the unwrapped Bohemian rye breads dropped off uniformly from the first and the sixth days. There was no appreciable change in the moisture content of the loaves wrapped in the paraffin paper. The moisture content of the loaves in the semi-porous paper remained nearly constant in the crumb but dropped off slightly in the crust. But little transference of moisture from crumb to crust is noticed.

The total proteid content does not vary throughout the experiment.

The soluble proteid factor shows almost no change in the unwrapped loaf. It increases slightly in the semi-porous wrapped loaf on the second day, then falling off but reaching its highest figure on the sixth day. On the contrary, the loaves wrapped in paraffin paper showed practically no change until the sixth day when a slight falling off was observed in the crumb.

It will be noted that the soluble proteid content of the Bohemian rye bread is much higher throughout the experiments than in the case of the other breads examined.

The soluble solid and soluble carbohydrate and starch factors varied but slightly throughout the experiment.

The lactic acid acidity is high in the unwrapped loaf on the first day, falling off on the second day, and from there on showing no change. The loaf wrapped in paraffin paper shows practically no change during the six days. The loaf in the semi-porous wrapper shows but little increase of acidity on the third day and a falling off on the fourth day after which no change was observed.

#### BREAD WRAPPED HOT NOT STUDIED.

It has been shown by Jacobs,<sup>1</sup> the authors and others, that bread wrapped while warm becomes soggy and of unpleasant flavor. The experience of bakers confirms these observations. In view of

<sup>1</sup> B. R. Jacobs, *Forecast*, 1912.

this admitted fact the authors have not felt it necessary to investigate the condition of bread wrapped fresh from the oven and all experiments have been conducted on bread allowed to cool thoroughly, usually during three hours after removal from the oven.

#### KIND OF PAPER USED IN WRAPPING BREAD.

In these investigations the waxed or paraffin wrapper was a heavy paraffin paper which, as used, made an air-tight and moisture-proof package. The paper referred to as semi-porous was in part that used on the trade-marked "Holsum" bread and in part of the type furnished by Geo. W. Haffner. These wrappers, while affording satisfactory protection against dust and dirt, did not prevent the escape of moisture nor impair completely the circulation of air.

#### PHYSICAL APPEARANCE OF BREAD.

Both baker and consumer judge the condition of bread by its physical appearance, that is, its odor, flavor and character of crust and crumb. The odor and flavor of distinct types of bread are essentially unlike. The crust of different types varies greatly, some breads being most desirable when the crust is light, soft and porous, while other types are preferred because of the thick and impervious crust. In order to determine the effect upon the physical appearance of the bread, we have exposed, under ordinary conditions of keeping, loaves unwrapped and wrapped with paraffin and semi-porous wrappers, and have noted each day the condition of the crust, the odor, taste and the development of moulds.

Five types of bread were used in the study: (1) straight dough pan bread; (2) straight dough rye bread; (3) sponge dough rye bread; (4) straight dough Vienna hearth; and (5) Bohemian rye sponge. The daily observations on each loaf are represented in the accompanying charts.

In general, the results confirm our earlier observations although the evidence of impaired condition in rye bread was not so great in this as in the earlier experiments.<sup>1</sup> The straight dough pan bread, (Sets C and D) developed a slightly stale odor on the second day, while the loaf in the paraffin wrapper was in excellent condition on the third day. The nutty flavor of the unwrapped loaf was about gone on the fourth day, while the wrapped loaf was still in fair condition.

Set "E" is a duplicate experiment with paraffin wrapped

<sup>1</sup> Barnard and Bishop, Indiana State Board of Health Report, 1910, p. 234.

straight dough pan bread on bread obtained from a different source. In general the observations were the same as in Set "C."

The results on the straight dough pan bread in semi-porous wrapper were a little more favorable to the use of the wrapper than the paraffin wrapper. A very slight musty odor developed in the unwrapped bread on the 5th day. In the Vienna hearth straight dough studies, the unwrapped bread showed deterioration on the second day, the crust becoming increasingly hard and the crumb dry and tasteless. Where the bread was wrapped in the paraffin paper the crust softened on the second day, but the odor and taste of the crumb remained good, no deterioration other than the softened crust being observed until the fourth day, when the crumb was noticeably stale.

The samples wrapped in the semi-porous paper were but little different from those wrapped in the paraffin. It was noted that the sample on the fourth day did not have as good a taste and odor as the duplicate sample wrapped in paraffin paper.

The authors' observations on the Vienna breads do not fully confirm their earlier report, these experiments showing that the Vienna hearth straight dough bread keeps reasonably well in both the paraffin and semi-porous paper.

The straight dough rye bread wrapped in paraffin paper preserved its condition both as to crust, odor and taste until the sixth day. The unwrapped bread showed a hardened crust on the second day and but little change in the condition of the crumb or in odor and taste until the fifth day. The straight dough rye bread in the semi-porous wrapper developed a stale odor on the fifth day. The unwrapped sample on this day had a very hard and dry crust, although the odor was still good.

The samples of sponge dough rye bread wrapped in paraffin paper were normal on the fourth day. On this day the odor and taste of the unwrapped samples were not as good as on the second day. On the sixth day the wrapped sample had a tough crust but the condition of the crumb, odor and taste was practically normal.

Samples of wrapped and unwrapped Bohemian rye sponge dough were decidedly influenced by wrapping. A sour taste was noticed on the third day on the unwrapped samples and the crumb was dried out. The crust of the sample wrapped in paraffin paper softened on the second day and on the third day. The loaf was moist and sticky and had a marked flavor. On the sixth day many mould colonies appeared on the crust, the crumb, however, being free from moulds. The loaf wrapped in semi-porous paper differed in no way from the loaf wrapped in the paraffin paper except that

fewer mould colonies developed on the crust. (See Charts No. 37 through No. 44.)

#### CONCLUSIONS.

I. In general the chemical data confirm the authors' observations on the physical appearance of the wrapped and unwrapped loaves. Much of the chemical work shows no departure from established normals and the hundreds of analyses serve only to confirm each other. It is clear that the wrapping of bread, either in semi-porous waxed or paraffin paper retards the escape of moisture and tends to the preservation of the colloidal condition and physio-chemical equilibrium noted by Katz, the destruction of which results in staleness. The belief that the moisture of the crumb is imparted to the crust which thereby loses its crispness and becomes soft is not borne out by the results of the authors' experiments. Reference to the graphic charts show conclusively that in almost every case a loss of the moisture content of the crumb is accompanied by similar and almost exactly parallel loss of the moisture content of the crust. Observations to the contrary have perhaps been in error because of the usual custom of comparing the feel of the wrapped and unwrapped loaves on successive days, instead of comparing the texture of the crust of the wrapped loaf with the crust of a freshly baked loaf. The authors' conclusions as to the loss of moisture, while somewhat surprising, appear to be fully justified by the results of the numerous experiments.

II. It has long been held that bread on keeping develops an increasing acidity which is customarily expressed as lactic acid. The work of White above referred to disputes this belief. The work of the authors shows conclusively that lactic acid acidity does not develop either in the unwrapped or wrapped loaf in the case of ordinary breads within six days after baking. A reference to the graphic chart clearly shows that the acid content remains almost constant, varying but little throughout the period during which the loaves were under observation.

III. The use of semi-porous and paraffin wrappers does not injure the quality of the loaf after the third day. Up to that time the keeping quality both as to condition of crumb, flavor and odor is enhanced by the use of the wrappers. Unwrapped bread loses its freshness after the first day. But little difference is observed in the condition of the straight dough pan bread, straight dough rye, sponge dough rye bread and straight dough Vienna hearth bread. Bohemian rye sponge dough wrapped or unwrapped bread is not of satisfactory quality on and after the third day.

**STRAIGHT DOUGH—PAN BREAD.**

**Loaves unwrapped—Factors on wet basis. Analyses made upon fresh samples without drying.**

Leaf Number.	2.			3.			4.			5.			6.			7.			8.			Average.		
	Crust	Crumb	Comp.	Crust	Crumb	Comp.	Crust	Crumb	Comp.	Crust	Crumb	Comp.	Crust	Crumb	Comp.	Crust	Crumb	Comp.	Crust	Crumb	Comp.	Crust	Crumb	Comp.
Moisture .....	24.21	42.18	31.70	19.85	42.26	32.29	14.53	42.63	33.28	22.93	42.82	33.64	19.32	41.85	33.44	17.51	40.86	31.61	18.8	38.28	30.87	19.47	41.54	32.40
Ash .....	785	526	720	508	715	739	845	538	1.09	786	628	827	1.34	537	588	80	546	645	758	532	619	826	587	747
Total protein .....	11.42	8.30	9.78	12.19	11.88	12.28	7.55	10.20	20.20	11.40	8.51	9.54	12.60	8.51	10.38	12.43	8.00	10.22	12.38	8.54	10.22	12.10	8.56	10.31
Soluble protein .....	700	758	709	879	700	879	655	487	487	592	525	525	630	472	630	700	487	592	700	487	592	681	569	730
Total solids .....	75.79	57.82	68.3	80.75	57.74	67.71	85.42	57.37	66.72	77.07	57.18	66.38	80.68	58.15	66.56	82.49	59.14	68.39	81.2	61.72	69.13	80.4	58.44	67.19
Soluble solids .....	9.14	7.15	7.65	9.32	6.76	8.15	9.37	6.93	7.80	9.06	6.925	7.825	10.11	7.43	8.90	9.87	7.48	8.25	10.40	8.11	8.80	9.60	7.21	8.19
Starch .....	53.54	39.79	45.99	60.47	40.60	47.29	33.78	40.73	45.70	54.07	31.16	43.97	57.88	40.18	48.94	57.88	40.18	48.94	56.95	49.4	47.79	55.78	40.25	46.94
Soluble carbo .....	6.48	5.52	6.28	8.48	4.92	6.32	8.30	6.35	7.10	8.60	5.50	6.00	5.85	3.75	3.45	5.50	3.75	5.85	6.5	4.7	6.1	7.02	4.93	5.87
Acidity as lactic .....	0.47	0.58	0.54	0.23	0.27	0.27	0.23	0.18	0.18	0.18	0.11	0.16	0.20	0.16	0.16	0.23	0.19	0.23	0.16	0.11	0.14	0.20	0.17	0.19

### STRAIGHT DOUGH—PAN BREAD.

Loaves unwrapped. Analyses made upon fresh samples without drying. Factors in Chart No. 1 calculated to dry basis.

[illegible]

CHART NO. 3.

## STRAIGHT DOUGH—PAN BREAD.

These samples were half loaves of the corresponding numbers in Charts Nos. 1 and 2. Samples dried before analysis.

Loaf Number.	5-A.		6-A.		7-A.		9-A.		Average.	
	Crust.	Comp.	Crumb.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.
Total protein.....	15.15	14.80	15.20	14.45	15.15	14.80	15.20	15.15	14.90	14.95
Soluble protein.....	12.37	12.77	12.37	11.56	12.12	12.00	13.31	13.12	12.44	12.27
Soluble solids.....	10.1	8.87	9.37	8.25	9.0	9.10	8.75	9.05	9.08	9.15
Soluble carbohydrates.....	66.06	71.22	69.44	69.97	73.44	68.49	68.4	68.53	67.92	69.28
Starch.....	24.87	44.00	22.33	43.23	38.67	0.23	18.18	44.26	21.04	40.04
Moisture in loaf.....	0.28	0.25	0.28	0.23	0.23	0.23	0.23	0.25	0.25	0.25
Acidity as lactic.....										

CHART NO. 4.

## SPONGE DOUGH—HEARTH BREAD.

Calculated to Dry Basis—Unwrapped samples dried before analysis.

Loaf Number	9-A.		9-B.		10-A.		10-B.		13-A.		13-B.	
	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.
Moisture.....	20.7	37.6	17.5	37.5	20.4	33.4	19.6	39.2	18.8	37.35	20.0	37.70
Total protein.....	15.55	15.80	15.55	15.90	15.40	14.70	15.10	14.70	14.90	14.70	14.60	14.45
Soluble protein.....	7.45	6.88	6.88	6.88	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92
Soluble solids.....	10.31	10.87	10.75	10.34	10.37	10.37	9.53	10.1	10.75	8.60	10.80	9.62
Soluble carbs.....	5.77	5.90	5.80	5.93	5.90	5.56	5.53	5.65	5.66	5.93	6.23	6.10
Starch.....	66.3	67.0	70.1	71.2	68.0	64.8	69.5	71.6	70.0	71.0	67.5	66.0
Acidity as lactic.....	0.23	0.20	0.23	0.20	0.20	0.20	0.20	0.28	0.28	0.28	0.28	0.28
Ash.....	0.90	0.95	0.90	0.90	0.95	1.00	1.02	0.97	0.95	1.00	1.12	0.85

Acidity after drying.

CHART No. 5.

## STRAIGHT DOUGH—PAN BREAD.

Fresh samples unwrapped, calculated to dry basis.

Loaf Number.	11-A.		11-B.		12-A.		12-B.		14-A.		14-B.	
	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.
Moisture.....	21.8	42.7	34.5	42.75	22.7	42.2	34.9	42.3	18.2	40.9	25.3	40.8
Total protein.....	14.20	14.00	14.60	14.00	13.90	13.65	13.80	13.80	14.60	14.40	14.60	14.66
Soluble protein.....	13.38	14.30	13.65	13.89	12.90	13.66	13.66	13.66	14.60	14.40	14.60	14.66
Soluble solids.....	5.10	5.65	5.60	6.37	5.73	5.77	5.33	5.65	11.70	11.90	11.57	11.58
Soluble carbohyd.....	69.8	71.3	69.3	66.0	69.3	71.5	71.1	68.5	5.62	5.71	5.36	5.68
Starch.....	0.28	0.26	0.26	0.26	0.28	0.28	0.28	0.28	69.0	71.3	72.0	71.1
Acidity as lactic.....	0.96	1.07	1.05	0.92	0.90	1.00	0.90	0.90	1.00	1.25	1.00	1.05
Ash.....									0.36	0.38	0.36	0.36
									1.00	1.00	1.00	1.00

Samples dried before analysis. Acidity after drying.

CHART No. 6.

## STRAIGHT DOUGH—PAN BREAD.

Samples Unwrapped.

Loaf Number.	2-C, 1st Day.		4-C, 2d Day.		6-C, 3d Day.		8-C, 4th Day.		10-C, 5th Day.		12-C, 6th Day.	
	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.
Moisture.....	27.8	47.8	24.75	43.2	20.0	37.5	17.50	35.5	17.65	39.4	12.9	36.4
Total protein.....	14.88	14.94	14.88	15.4	15.40	15.30	15.40	15.50	15.40	15.40	15.40	15.32
Soluble protein.....	11.325	11.547	10.895	11.028	10.575	10.575	10.575	10.575	11.482	11.482	10.482	10.482
Soluble solids.....	5.97	5.44	5.93	7.33	10.42	10.68	10.42	10.32	11.28	10.75	10.32	10.43
Soluble carbohyd.....	69.86	69.97	71.19	70.73	73.70	73.30	73.70	73.30	5.60	5.43	5.36	5.40
Starch.....	0.34	0.31	0.33	0.33	0.33	0.33	0.33	0.33	69.20	69.20	68.00	67.00
Acidity as lactic.....	0.90	1.10	0.97	1.10	1.02	1.03	1.02	0.90	0.92	0.92	0.92	0.92
Ash.....									0.36	0.36	0.36	0.36

Samples dried before analysis. Wrapped samples corresponding to this set reported in Chart No. 7.

Chart No. 7.  
STRAIGHT DOUGH—PAN BREAD.  
Samples wrapped in waxed paper.

Loaf Number.	3-C, 2d Day.			5-C, 3d Day.			7-C, 4th Day.			9-C, 5th Day.			11-C, 6th Day.		
	Crust.	Crumb.	Comp.	Crust.	Crumb.	Comp.	Crust.	Crumb.	Comp.	Crust.	Crumb.	Comp.	Crust.	Crumb.	Comp.
Moisture.....	22.2	41.9	.....	29.4	48.1	.....	22.45	38.5	.....	25.15	38.7	.....	16.25	33.0	.....
Total protein.....	14.86	15.20	15.20	15.40	15.22	15.40	15.57	15.50	15.40	15.40	15.40	15.50	15.22	15.22	15.30
Soluble protein.....	5.68	5.47	5.47	5.37	4.81	4.81	5.75	4.82	4.82	5.25	5.25	5.46	4.82	4.40	4.40
Soluble solids.....	10.75	11.15	11.12	10.25	10.92	10.75	10.50	11.00	10.86	10.52	11.12	10.97	10.75	10.88	10.88
Soluble carbohydrates.....	5.10	4.45	4.90	6.60	7.30	6.52	7.07	4.72	5.50	4.82	5.00	4.96	4.77	5.78	5.30
Starch.....	71.91	72.40	73.5	72.36	71.00	71.75	64.80	66.86	66.80	71.00	67.72	69.3	69.96	68.60	69.80
Acidity as lactic.....	0.25	0.25	0.25	0.23	0.23	0.23	0.28	0.23	0.23	0.23	0.25	0.25	0.23	0.23	0.23
Ash.....	1.07	1.15	1.10	.95	.95	1.00	.93	.90	.99	.85	.80	.90	1.00	.95	.98

Samples dried before analysis. Unwrapped samples corresponding to this set reported in Chart No. 6.



CHART No. 5.

## STRAIGHT DOUGH—PAN BREAD.

Fresh samples unwrapped, calculated to dry basis.

Loaf Number.	11-A.			11-B.			12-A.			12-B.			14-A.			14-B.		
	Crust.		Comp.	Crust.		Comp.	Crust.		Comp.	Crust.		Comp.	Crust.		Comp.	Crust.		Comp.
	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.
Moisture.....	21.8	42.7	34.5	42.75	34.1	22.7	42.2	34.9	42.2	35.2	23.3	42.2	18.2	40.9	33.8	25.3	40.8	34.9
Total protein.....	14.20	14.00	14.00	14.00	14.00	13.80	13.65	13.80	13.65	13.80	13.65	13.80	14.60	14.40	14.60	14.60	14.60	14.65
Soluble protein.....	7.40	7.40	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42
Soluble solids.....	13.38	14.30	13.65	13.89	13.62	12.90	13.50	12.95	13.07	13.36	13.12	13.57	11.70	11.90	11.77	11.57	11.83	11.75
Soluble carbohy.....	5.10	5.65	5.60	6.37	5.90	5.73	5.77	5.33	5.65	5.45	5.65	5.45	5.62	5.71	5.97	5.36	5.68	5.78
Starch.....	69.8	71.3	69.3	64.4	63.8	69.3	71.5	71.1	70.2	69.3	68.5	68.5	69.0	71.3	67.2	72.0	71.1	72.3
Acidity as lactic.....	0.28	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.36	0.36	0.36	0.36	0.36	0.36
Ash.....	.95	1.07	1.05	.92	1.02	.90	1.00	.90	.90	1.10	.90	1.10	1.00	1.25	.90	1.00	1.05	.90

Samples dried before analysis. Acidity after drying.

CHART No. 6.

## STRAIGHT DOUGH—PAN BREAD.

Samples Unwrapped.

Loaf Number.	2-C, 1st Day.			4-C, 2d Day.			6-C, 3d Day.			8-C, 4th Day.			10-C, 5th Day.			12-C, 6th Day.		
	Crust.		Comp.	Crust.		Comp.	Crust.		Comp.	Crust.		Comp.	Crust.		Comp.	Crust.		Comp.
	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.	Crust.	Comp.
Moisture.....	27.8	47.8	14.95	42.2	24.75	15.4	37.5	20.0	37.5	17.50	35.5	15.40	17.65	39.6	15.30	12.9	36.4	15.30
Total protein.....	14.95	14.95	14.95	15.4	15.4	15.4	15.40	15.40	15.40	15.40	15.40	15.40	15.40	15.40	15.40	15.40	15.40	15.40
Soluble protein.....	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42
Soluble solids.....	11.0	11.32	10.93	11.00	10.80	10.93	10.93	10.93	10.93	10.93	10.93	10.93	11.25	10.75	11.00	10.38	10.66	10.46
Soluble carbohy.....	5.87	5.45	5.60	7.12	7.12	7.12	6.97	6.97	6.97	6.97	6.97	6.97	5.90	5.63	5.66	5.20	6.06	6.50
Starch.....	69.86	69.97	69.94	71.90	71.10	72.70	72.00	72.36	68.70	69.30	69.70	69.70	69.20	64.50	66.00	68.00	67.81	67.00
Acidity as lactic.....	0.34	0.31	0.31	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Ash.....	.90	1.10	.92	1.10	.97	1.10	1.05	1.02	1.05	1.07	.80	.90	.92	.96	.94	.97	.96	.96

Samples dried before analysis. Wrapped samples corresponding to this set reported in Chart No. 7.

Chart No. 7.  
STRAIGHT DOUGH—PAN BREAD.  
Samples wrapped in waxed paper.

Loaf Number.	3-C, 2d Day.			5-C, 3d Day.			7-C, 4th Day.			9-C, 5th Day.			11-C, 6th Day.		
	Crust.	Crumb.	Comp.	Crust.	Crumb.	Comp.	Crust.	Crumb.	Comp.	Crust.	Crumb.	Comp.	Crust.	Crumb.	Comp.
Moisture.....	22.2	41.9	.....	29.4	48.1	.....	22.45	38.5	.....	25.15	38.7	.....	16.25	33.0	.....
Total protein.....	14.86	15.20	15.20	15.40	15.22	15.40	15.57	15.50	15.40	15.40	15.40	15.50	15.22	15.22	15.30
Soluble protein.....	5.68	5.47	5.47	5.43	4.81	4.81	5.75	4.53	4.53	5.75	5.25	5.46	4.52	4.40	4.40
Soluble solids.....	10.75	11.15	11.12	10.25	10.92	10.75	10.50	11.00	10.86	10.82	11.12	10.97	10.75	10.88	10.88
Soluble carbohydrates.....	5.10	4.45	4.90	6.60	7.30	6.52	7.07	4.72	5.50	4.82	5.00	4.98	4.77	5.78	5.30
Starch.....	71.91	72.40	73.5	72.36	71.00	71.75	64.80	66.86	66.80	71.00	67.72	69.3	69.96	68.00	69.80
Acidity as lactic.....	0.25	0.25	0.25	0.23	0.23	0.23	0.28	0.23	0.23	0.23	0.25	0.25	0.23	0.23	0.23
Ash.....	1.07	1.15	1.10	.95	.95	1.00	.93	.90	.99	.85	.80	.90	1.00	.95	.98

Samples dried before analysis. Unwrapped samples corresponding to this set reported in Chart No. 6.

CHART No. 8.  
STRAIGHT DOUGH—PAN BREAD.

Loaf Number.	1st Day, No. 2-D.		2nd Day, No. 4-D.		3rd Day, No. 6-D.		4th Day, No. 8-D.		5th Day, No. 10-D.		6th Day, No. 12-D.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture .....	21.2	43.0	20.8	39.6	18.84	38.35	17.12	35.85	18.2	36.9	12.98	33.5
Total protein .....	15.05	14.96	14.70	14.55	14.19	14.50	14.50	14.60	14.35	14.45	14.50	14.17
Soluble protein .....	.525	.502	.482	.502	.525	.546	.502	.525	.525	.502	.502	.482
Soluble solids .....	10.61	10.96	10.11	10.25	10.65	10.80	10.71	10.50	10.81	10.68	10.55	10.71
Soluble carbo- hydrates .....	7.05	7.65	6.95	6.47	6.60	6.57	6.45	6.92	7.15	6.70	6.30	6.75
Starch .....	57.5	56.2	58.50	57.2	64.7	71.5	71.7	70.0	67.9	72.2	67.2	65.5
Acidity as lactic .....	0.23	0.20	0.19	0.20	0.23	0.23	0.23	0.23	0.23	0.23	0.20	0.20
Ash .....	1.11	0.98	0.98	0.94	0.96	1.11	1.17	1.00	1.02	0.98	1.17	1.05

Samples dried before analysis. Loaves unwrapped. Wrapped samples corresponding to this set reported in Chart No. 9.

CHART No. 9.  
STRAIGHT DOUGH—PAN BREAD.

Loaf.	2d Day, No. 3-D.		3d Day, No. 5-D.		4th Day, No. 7-D.		5th Day, No. 9-D.		6th Day, No. 11-D.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture .....	23.52	39.5	21.6	36.2	20.0	37.5	18.56	34.8	16.18	33.3
Total protein .....	15.15	14.96	14.19	14.87	14.96	15.05	14.70	14.60	14.50	14.35
Soluble protein .....	.502	.482	.525	.525	.567	.567	.502	.525	.482	.490
Soluble solids .....	10.15	10.50	10.83	10.68	10.78	10.78	10.87	10.65	10.57	10.68
Soluble carbohydrates .....	7.03	7.03	6.25	6.72	6.57	6.50	7.10	6.95	6.1	5.9
Starch .....	60.03	54.50	66.6	66.1	68.6	69.0	69.2	71.2	66.0	66.9
Acidity as lactic .....	0.20	0.20	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Ash .....	1.25	1.03	0.95	1.03	1.03	1.09	1.12	1.15	1.20	1.03

Samples dried before analysis. Loaves wrapped in semi-porous paper. Unwrapped samples corresponding to this set reported in Chart No. 8.

CHART No. 10.  
STRAIGHT DOUGH—PAN BREAD.

Loaf Number.	1st Day, 2-E.		2nd Day, 4-E.		3rd Day, 6-E.		4th Day, 8-E.		5th Day, 10-E.		6th Day, 12-E.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture .....	23.5	43.6	26.4	43.7	17.9	39.2	20.0	38.0	15.4	39.3	21.3	39.0
Total protein .....	14.42	14.17	14.35	14.60	14.35	14.43	14.50	14.43	14.10	14.10	14.26	14.17
Soluble protein .....	.525	.548	.525	.548	.657	.525	.525	.548	.569	.525	.612	.548
Soluble solids .....	10.75	10.80	10.96	10.79	10.62	10.56	10.90	10.69	10.48	10.73	10.52	10.05
Soluble carbo- hydrates .....	6.57	6.57	6.97	6.97	6.17	6.15	6.35	6.27	5.80	6.20	6.25	6.22
Starch .....	68.11	67.44	71.12	70.86	70.05	70.47	64.26	63.83	69.48	71.14	68.26	67.52
Acidity as lactic .....	0.23	0.23	0.23	0.23	0.28	0.28	0.28	0.28	0.33	0.28	0.45	0.39
Ash .....	1.00	0.94	1.05	1.05	1.15	1.10	0.93	0.86	1.15	1.07	1.10	1.03

Samples dried before analysis. Loaves unwrapped. Wrapped samples corresponding to this set reported in Chart No. 11.

CHART No. 11.

## STRAIGHT DOUGH—PAN BREAD.

Loaf Number.	2d Day, 3-E.		3d Day, 5-E.		4th Day, 7-E.		5th Day, 9-E.		6th Day, 11-E.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	25.8	40.8	26.9	40.9	30.0	39.4	27.6	37.9	25.4	40.6
Total protein.....	14.60	14.42	14.50	14.70	14.22	14.35	13.82	14.10	14.10	14.17
Soluble protein.....	.525	.525	.590	.548	.525	.657	.612	.920	.569	.940
Soluble solids.....	10.70	10.05	10.70	10.32	10.05	10.71	10.70	10.48	10.78	10.82
Soluble carbohydrates.....	6.52	6.15	6.25	6.45	5.77	6.27	6.0	6.15	6.42	6.37
Starch.....	69.28	68.94	71.95	69.34	71.93	67.70	71.10	70.06	69.14	70.32
Acidity as lactic.....	0.25	0.25	0.23	0.23	0.28	0.28	0.36	0.33	0.31	0.26
Ash.....	1.17	1.02	0.96	1.01	1.04	0.97	1.45	1.03	1.27	0.86

Samples dried before analysis. Loaves wrapped in paraffin paper. Unwrapped samples corresponding to this set reported in Chart No. 10.

CHART No. 12.

## STRAIGHT DOUGH—RYE BREAD.

Loaf Number.	1st Day, 2-F.		2d Day, 4-F.		3d Day, 6-F.		4th Day, 8-F.		5th Day, 10-F.		6th Day, 12-F.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	26.4	40.4	21.3	37.7	18.0	38.5	12.90	38.5	12.7	32.3	12.5	32.0
Total protein.....	15.30	15.90	15.60	15.50	15.75	15.75	15.76	15.70	16.25	16.25	16.10	16.10
Soluble protein.....	.700	.790	.855	.810	.785	.785	.830	.920	.940	.830	.880	.920
Soluble solids.....	11.62	12.70	12.12	13.00	10.86	11.30	11.25	11.36	12.56	12.17	11.36	11.18
Soluble carbohydrates.....	7.15	7.0	7.67	7.43	6.80	7.20	7.25	6.73	6.83	6.35	6.90	6.40
Starch.....	68.26	69.00	67.79	67.78	68.25	69.59	69.62	70.22	70.63	69.61	70.06	71.81
Acidity as lactic.....	0.50	0.47	0.39	0.34	0.37	0.34	0.39	0.36	0.40	0.40	0.40	0.37
Ash.....	1.37	1.45	1.17	1.30	1.70	1.25	1.11	1.25	1.40	1.35	1.30	1.30

Samples dried before analysis. Loaves unwrapped. Wrapped samples corresponding to this set reported in Chart No. 13.

CHART No. 13.

## STRAIGHT DOUGH—RYE BREAD.

Loaf Number.	2d Day, 3-F.		3d Day, 5-F.		4th Day, 7-F.		5th Day, 9-F.		6th Day, 11-F.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	24.0	38.9	23.1	37.1	27.1	37.7	28.9	36.5	25.0	27.6
Total protein.....	15.75	15.90	15.40	15.25	15.90	15.90	15.75	15.92	15.6	15.2
Soluble protein.....	.613	.745	.785	.830	.855	.785	.855	.830	.745	.920
Soluble solids.....	11.55	11.75	11.36	11.75	11.55	10.81	10.25	10.90	9.82	11.42
Soluble carbohydrates.....	7.35	7.45	7.15	7.35	5.90	6.15	6.23	6.67	5.65	6.90
Starch.....	67.86	68.44	68.04	67.86	67.16	69.88	72.06	73.84	70.51	70.92
Acidity as lactic.....	0.50	0.48	0.40	0.39	0.37	0.37	0.40	0.37	0.40	0.40
Ash.....	1.30	1.25	1.30	1.20	1.20	1.20	1.28	1.25	1.30	0.85

Samples dried before analysis. Loaves wrapped in paraffin paper. Unwrapped samples corresponding to this set reported in Chart No. 12.

## CHART No. 14.

## STRAIGHT DOUGH—RYE BREAD.

Loaf Number.	1st Day, 2-G.		2d Day, 4-G.		3d Day, 6-G.		4th Day, 8-G.		5th Day, 10-G.		6th Day, 12-G.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	23.3	41.5	24.6	39.6	17.35	36.9	13.62	32.3	21.69	33.0	14.2	28.6
Total protein....	15.59	15.42	15.40	15.20	15.40	15.08	15.05	14.70	15.05	15.08	14.70	15.05
Soluble protein....	.875	.875	.875	.875	.875	.875	.830	.830	.700	.677	.788	.875
Soluble solids....	12.52	13.07	11.62	11.80	12.00	12.62	11.37	11.62	9.44	11.12	11.22	12.16
Soluble carbo- hydrates.....	6.10	5.60	5.80	6.37	6.72	7.15	6.10	6.42	6.72	6.15	6.90	6.15
Starch.....	69.66	69.66	68.58	65.83	71.80	70.78	72.09	70.90	68.83	71.19	68.26	72.76
Acidity as lactic..	0.39	0.39	0.39	0.39	0.39	0.36	0.39	0.39	0.36	0.36	0.36	0.36
Ash.....	1.55	1.17	1.20	1.30	1.15	1.20	1.20	1.15	1.35	1.10	1.25	1.25

Samples dried before analysis. Loaves unwrapped. Wrapped samples corresponding to this set reported in Chart No. 15.

## CHART No. 15.

## STRAIGHT DOUGH—RYE BREAD.

Loaf Number.	2d Day, 3-G.		3d Day, 5-G.		4th Day, 7-G.		5th Day, 9-G.		6th Day, 11-G.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	23.7	39.0	24.7	38.2	20.2	34.1	13.42	28.62	18.9	33.3
Total protein....	15.20	15.30	15.20	15.30	15.20	15.20	15.20	15.05	14.90	14.90
Soluble protein....	.920	.852	.920	.875	.875	.920	.744	.720	.875	.920
Soluble solids....	11.50	12.05	13.45	12.70	11.50	12.70	11.75	10.55	10.68	12.69
Soluble carbohydrates.....	5.45	6.12	7.40	8.12	7.13	7.80	6.10	6.42	6.00	6.40
Starch.....	68.0	68.74	71.64	69.62	68.91	69.66	71.01	71.80	72.00	70.02
Acidity as lactic..	0.39	0.39	0.36	0.36	0.36	0.39	0.39	0.36	0.36	0.36
Ash.....	1.10	1.20	1.30	1.17	1.20	1.20	1.20	1.20	1.50	1.40

Samples dried before analysis. Loaves wrapped in semi-porous paper. Unwrapped samples corresponding to this set, reported in Chart No. 14.

## CHART No. 16.

## SPONGE DOUGH—RYE BREAD.

Loaf Number.	1st Day, 2-H.		2d Day, 4-H.		3d Day, 6-H.		4th Day, 8-H.		5th Day, 10-H.		6th Day, 12-H.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	19.05	38.1	20.0	38.8	14.53	34.7	14.92	30.0	13.32	29.31	12.95	17.2
Total protein....	15.40	15.30	15.22	15.22	15.39	15.58	15.58	15.64	15.5	15.39	15.22	15.22
Soluble protein....	.744	.744	.700	.722	.656	.700	.678	.700	.744	.744	.787	.76
Soluble solids....	9.57	.963	9.12	9.50	8.94	8.62	9.00	8.44	9.38	9.00	9.94	9.22
Soluble carbo- hydrates.....	6.20	6.15	5.98	6.28	5.90	6.19	5.73	5.48	5.83	5.63	5.70	5.38
Starch.....	67.31	68.00	65.97	66.87	67.25	64.95	67.25	68.11	68.35	67.16	68.06	69.28
Acidity as lactic..	0.34	0.36	0.36	0.36	0.36	0.33	0.36	0.39	0.39	0.36	0.42	0.42
Ash.....	1.10	1.25	1.32	1.07	1.30	1.45	1.35	1.30	1.20	1.35	1.15	1.20

Samples dried before analysis. Loaves unwrapped. Wrapped samples corresponding to this set reported in Chart No. 17.

CHART No. 17.  
SPONGE DOUGH—RYE BREAD.

Loaf Number.	2d Day, 3-H.		3d Day, 5-H.		4th Day, 7-H.		5th Day, 9-H.		6th Day, 11-H.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	17.55	34.3	26.2	37.5	18.92	34.5	21.35	32.20	20.96	32.90
Total protein.....	15.22	15.39	15.39	15.39	15.58	15.58	15.64	15.50	15.50	15.60
Soluble protein.....	.744	.744	.700	.744	.700	.700	.744	.765	.744	.765
Soluble solids.....	9.66	8.75	8.87	9.00	8.50	8.69	8.37	8.50	8.82	8.94
Soluble carbohydrates.....	6.71	6.25	6.29	6.48	4.95	5.20	6.01	5.73	5.65	5.48
Starch.....	66.86	67.44	67.04	66.68	65.19	67.76	69.06	69.78	69.51	69.29
Acidity as lactic.....	0.39	0.42	0.39	0.36	0.36	0.36	0.39	0.33	0.42	0.36
Ash.....	1.43	1.41	1.35	1.17	1.45	1.30	1.20	1.30	1.65	1.25

Samples dried before analysis. Loaves wrapped in paraffin paper. Unwrapped samples corresponding to this set reported in Chart No. 16.

CHART No. 18.  
VIENNA BREAD.

Loaf Number.	1st Day, 1-I.		2d Day, 2-I.		3d Day, 3-I.		4th Day, 4-I.		5th Day, 5-I.		6th Day, 6-I.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	23.75	43.4	15.76	32.7	17.55	32.72	12.26	29.90	13.78	24.3	15.15	18.74
Total protein.....	14.36	14.45	14.35	14.00	14.95	14.70	14.35	14.50	14.70	14.52	14.40	14.40
Soluble protein.....	.480	.394	.415	.437	.546	.525	.437	.502	.480	.482	.482	.460
Soluble solids.....	8.74	8.90	9.66	9.50	8.62	8.44	9.00	8.12	8.56	8.13	9.37	9.30
Soluble carbohydrates.....	6.54	6.46	6.50	6.67	6.00	5.77	6.57	5.71	6.00	6.72	5.87	5.1
Starch.....	65.54	69.51	71.28	70.06	62.73	67.71	68.78	70.71	72.18	74.50	63.91	63.36
Acidity as lactic.....	0.31	0.25	0.25	0.25	0.28	0.23	0.28	0.23	0.28	0.31	0.25	0.25
Ash.....	1.00	1.00	.92	.92	.95	.95	.95	.90	.80	.86	1.70	1.40

Samples dried before analysis. Loaves unwrapped. Wrapped samples corresponding to this set reported in Charts Nos. 19 and 20.

CHART No. 19.  
VIENNA BREAD.

Loaf Number.	2d Day, 7-I.		3d Day, 8-I.		4th Day, 9-I.		5th Day, 10-I.		6th Day, 11-I.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	20.0	45.2	18.20	30.0	20.32	31.42	23.8	35.5	26.40	32.9
Total protein.....	14.28	14.35	14.17	14.17	14.00	14.10	14.23	14.35	14.35	14.42
Soluble protein.....	.482	.460	.415	.415	.437	.437	.437	.437	.415	.415
Soluble solids.....	8.75	9.77	9.32	9.37	9.87	9.38	8.27	8.41	8.27	8.70
Soluble carbohydrates.....	5.35	5.35	5.87	5.20	6.27	5.95	5.40	5.45	5.47	5.72
Starch.....	65.56	63.31	65.36	65.97	64.09	60.79	70.92	63.45	67.10	70.00
Acidity as lactic.....	0.23	0.23	0.28	0.25	0.31	0.28	0.28	0.28	0.28	0.28
Ash.....	1.48	1.06	.83	.68	.87	1.02	.87	.90	.85	.52

Samples dried before analysis. Loaves wrapped in paraffin paper. Unwrapped samples corresponding to this set reported in Chart No. 18.

CHART No. 20.  
VIENNA BREAD.

Loaf Number.	2d Day, 12-I.		3d Day, 13-I.		4th Day, 14-I.		5th Day, 15-I.		6th Day, 16-I.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	20.90	35.4	14.62	35.05	20.95	32.50	23.8	33.3	21.3	31.6
Total protein....	14.18	14.10	14.60	14.35	14.50	14.17	13.75	13.67	13.82	14.00
Soluble protein....	.482	.460	.482	.460	.460	.437	.437	.415	.460	.482
Soluble solids....	9.62	9.15	9.42	7.70	8.97	8.62	9.92	9.68	8.58	8.15
Soluble carbohydrates....	6.00	6.37	5.95	5.92	5.60	5.07	6.27	6.17	5.25	5.86
Starch.....	63.9	64.91	62.77	58.75	64.44	61.76	71.83	67.34	69.52	70.77
Acidity as lactic....	0.31	0.33	0.33	0.31	0.31	0.31	0.39	0.36	0.42	0.39
Ash.....	.90	.80	.85	.65	.85	.80	1.03	.79	.75	.80

Samples dried before analysis. Loaves wrapped in semi-porous paper. Unwrapped samples corresponding to this set reported in Chart No. 18.

CHART No. 21.  
SPONGE DOUGH BREAD—BOHEMIAN RYE.

Loaf Number.	1st Day, 1-J.		2d Day, 2-J.		3d Day, 3-J.		4th Day, 4-J.		5th Day, 5-J.		6th Day, 6-J.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	26.0	49.5	23.9	45.8	23.8	44.2	22.42	41.2	18.89	38.57	17.55	35.3
Total protein....	15.20	15.15	15.60	15.20	15.32	15.40	15.32	15.60	15.32	15.22	15.40	15.32
Soluble protein....	1.49	1.84	1.53	1.84	1.44	1.75	1.55	1.88	1.40	1.75	1.44	1.88
Soluble solids....	17.75	17.65	17.10	15.50	16.62	16.56	16.32	17.00	16.80	16.30	17.05	16.75
Soluble carbohydrates....	8.55	7.85	7.87	7.10	7.75	6.97	7.35	7.50	8.52	7.10	8.87	7.60
Starch.....	56.20	59.08	46.47	45.54	48.60	47.50	48.21	45.90	63.21	57.51	59.52	60.66
Acidity as lactic..	1.52	1.32	0.56	0.56	0.56	0.51	0.45	0.48	0.56	0.56	0.45	0.56
Ash.....	1.79	1.48	1.80	1.50	1.65	1.70	1.80	1.90	2.30	1.80	1.65	1.65

Samples dried before analysis. Loaves unwrapped. Wrapped samples corresponding to this set reported in Charts Nos. 22 and 23.

CHART No. 22.

## SPONGE DOUGH BREAD—BOHEMIAN RYE.

Loaf Number.	2d Day, 7-J.		3d Day, 8-J.		4th Day, 9-J.		5th Day, 10-J.		6th Day, 11-J.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	30.50	47.70	32.0	44.30	32.0	44.75	32.8	44.75	31.1	44.0
Total protein.....	15.22	15.15	15.22	15.60	15.50	15.50	15.60	15.40	15.60	15.50
Soluble protein.....	1.44	1.88	1.44	1.88	1.66	1.84	1.44	1.92	1.44	1.51
Soluble solids.....	16.80	16.85	16.05	16.80	15.70	16.82	15.12	16.95	17.65	15.25
Soluble carbohydrates.....	7.97	7.35	6.77	6.60	6.10	6.53	6.67	7.90	7.85	6.72
Starch.....	61.67	67.28	52.42	44.91	51.21	48.97	55.19	45.54	49.86	49.12
Acidity as lactic.....	0.79	0.90	1.07	1.29	0.95	1.24	0.95	1.57	1.18	1.12
Ash.....	1.85	1.55	1.83	2.05	2.13	1.67	1.75	1.55	1.83	1.77

Samples dried before analysis. Loaves wrapped in paraffin paper. Unwrapped samples corresponding to this set reported in Chart No. 21.

CHART No. 23.

## SPONGE DOUGH BREAD—BOHEMIAN RYE.

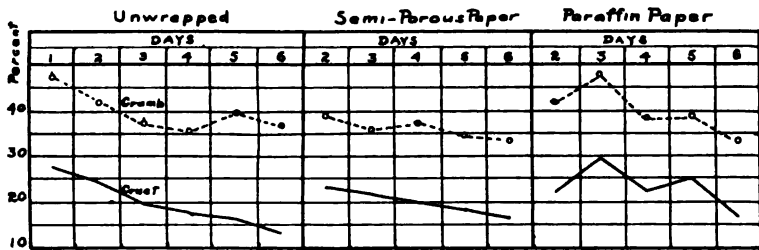
Loaf Number.	2d Day, 12-J.		3d Day, 13-J.		4th Day, 14-J.		5th Day, 15-J.		6th Day, 16-J.	
	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb	Crust	Crumb
Moisture.....	26.90	44.4	28.32	45.8	25.0	41.2	27.5	41.6	21.65	41.9
Total protein.....	15.40	15.50	15.50	15.40	15.88	15.40	15.58	15.58	15.58	15.40
Soluble protein.....	1.35	1.88	1.75	1.92	1.60	2.02	1.49	1.89	1.89	2.02
Soluble solids.....	17.45	17.80	16.80	17.25	19.40	17.80	16.45	17.38	17.90	18.50
Soluble carbohydrates.....	8.20	7.72	7.95	7.70	7.75	6.72	6.00	6.90	6.60	7.50
Starch.....	44.10	45.70	63.49	51.30	57.82	57.40	48.60	46.60	54.81	52.70
Acidity as lactic.....	1.35	1.29	2.25	1.91	1.69	1.69	1.69	1.80	1.91	1.91
Ash.....	1.62	1.85	1.76	1.53	1.79	2.00	1.95	1.88	1.70	1.55

Samples dried before analysis. Loaves wrapped in semi-porous paper. Unwrapped samples corresponding to this set reported in Chart No. 21.

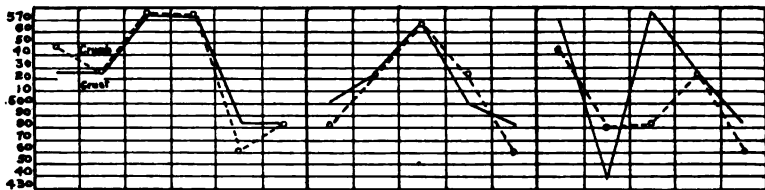


## STRAIGHT DOUGH PAN BREAD.

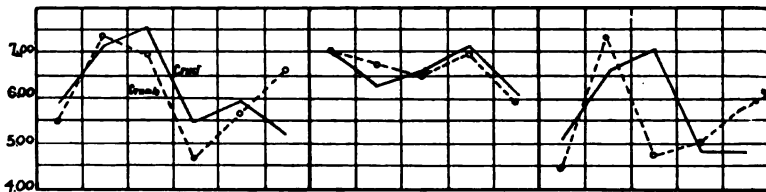
CHART N°24



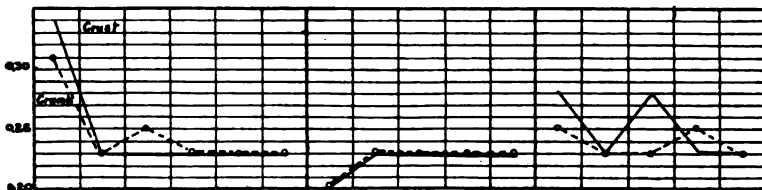
MOISTURE



SOLUBLE PROTEIN



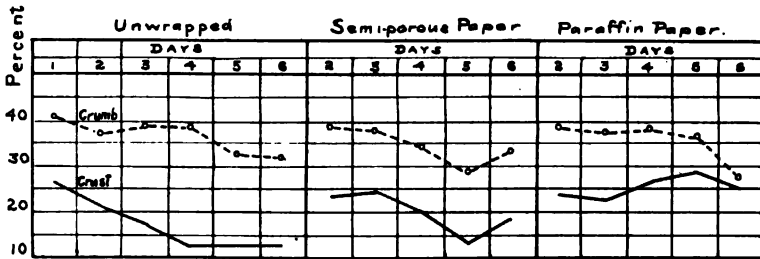
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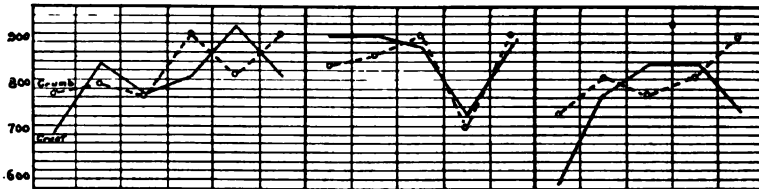
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## STRAIGHT DOUGH RYE BREAD.

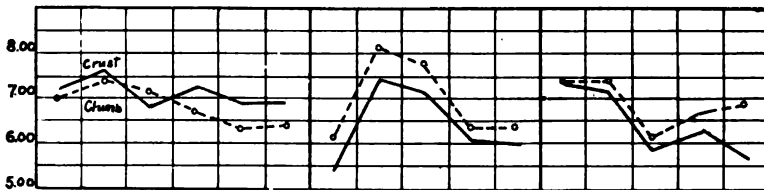
CHART No 25.



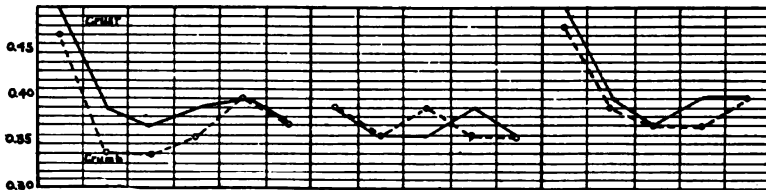
## MOISTURE



## SOLUBLE PROTEIN



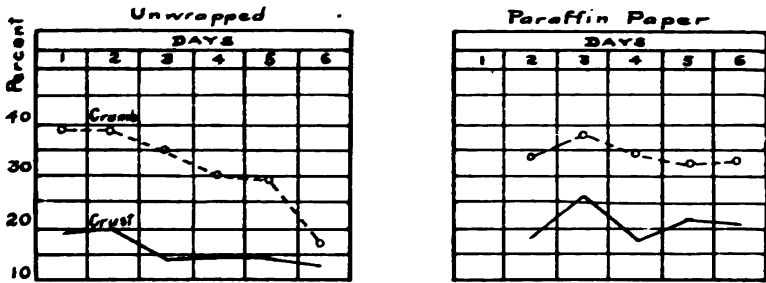
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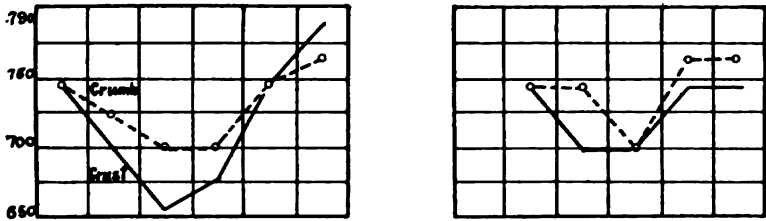
## ACIDITY as LACTIC.

# SPONGE DOUGH RYE BREAD

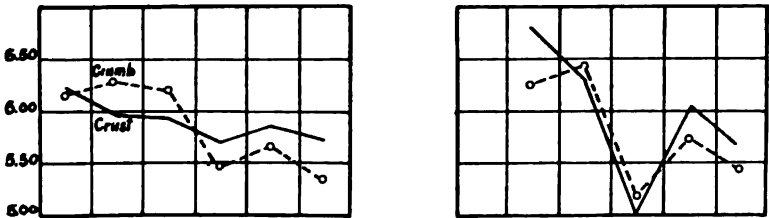
CHART No 26



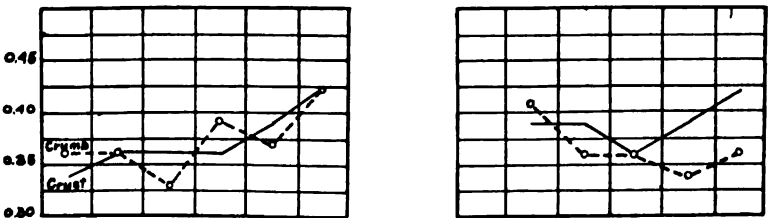
MOISTURE



SOLUBLE PROTEIN



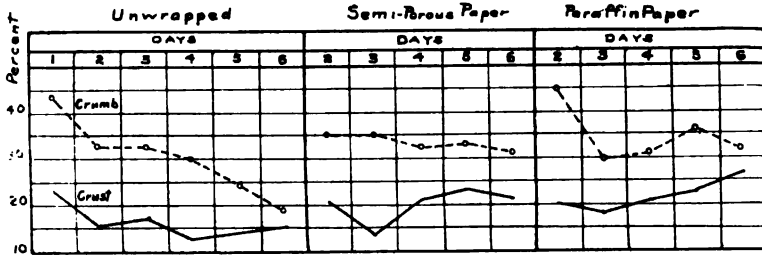
SOLUBLE CARBOHYDRATES



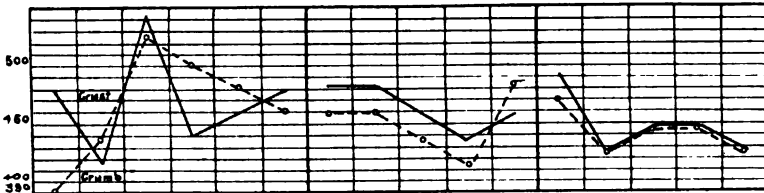
LACTIC ACID

# STRAIGHT DOUGH VIENNA HEARTH BREAD.

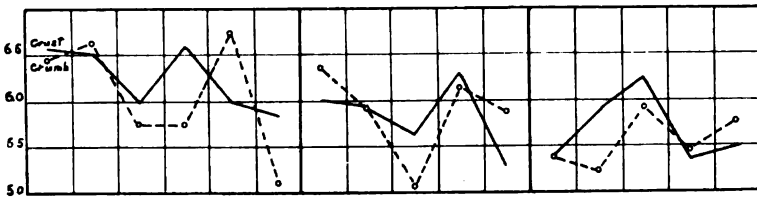
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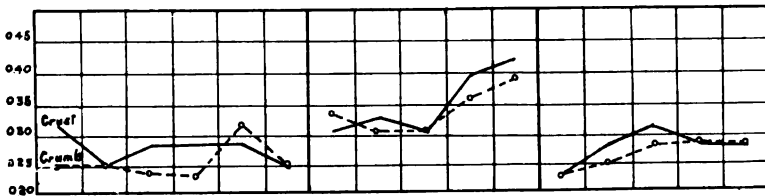
MOISTURE



SOLUBLE PROTEIN



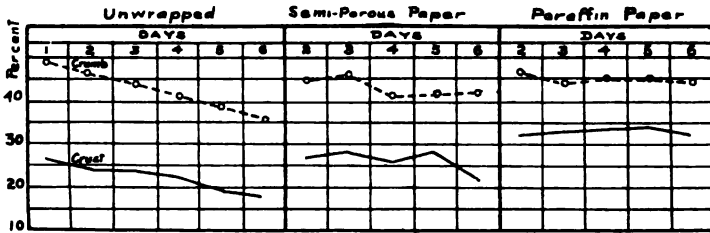
SOLUBLE CARBOHYDRATES



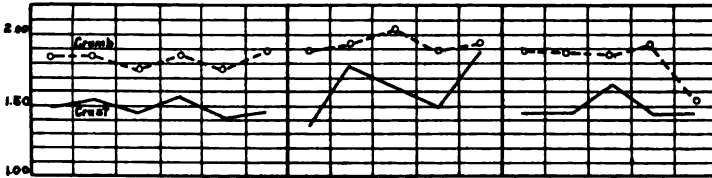
ACIDITY as LACTIC

# SPONGE DOUGH BOHEMIAN RYE BREAD

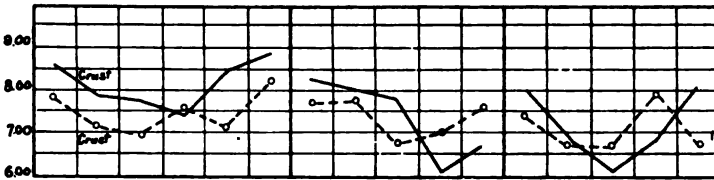
CHART No 28



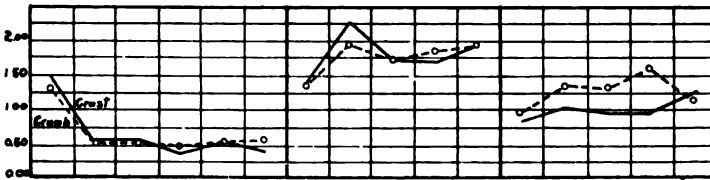
MOISTURE



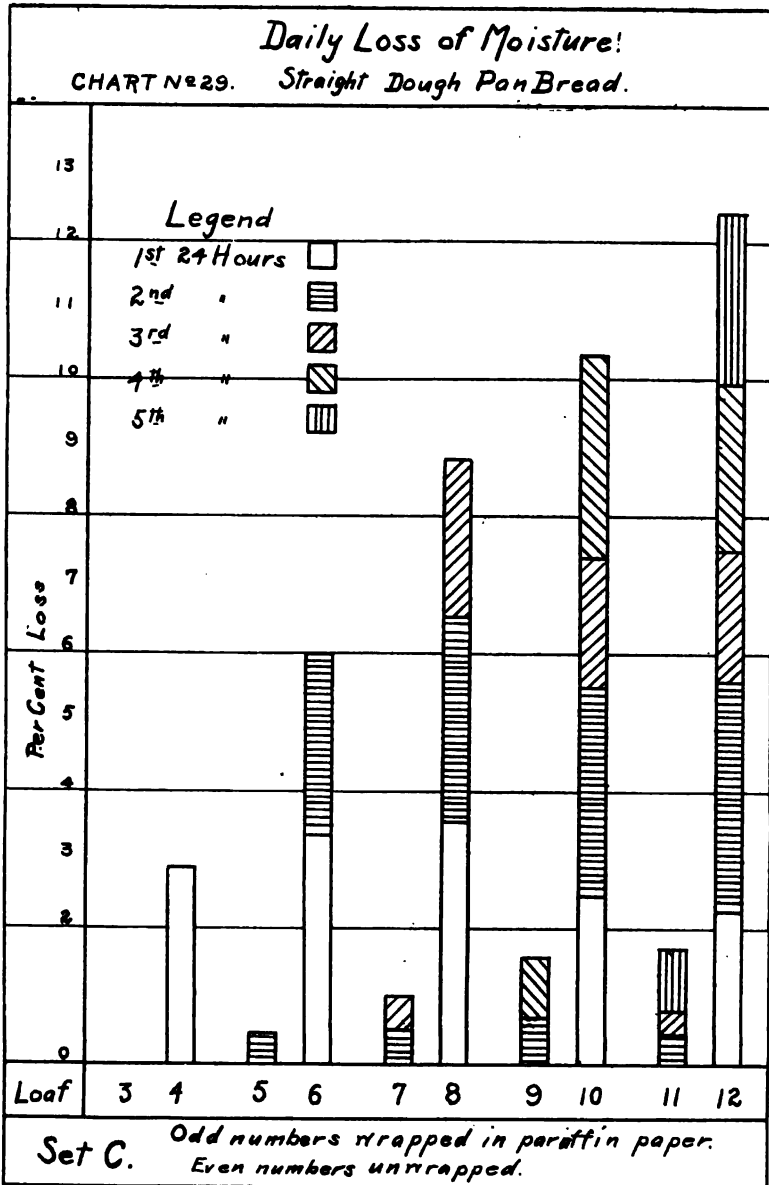
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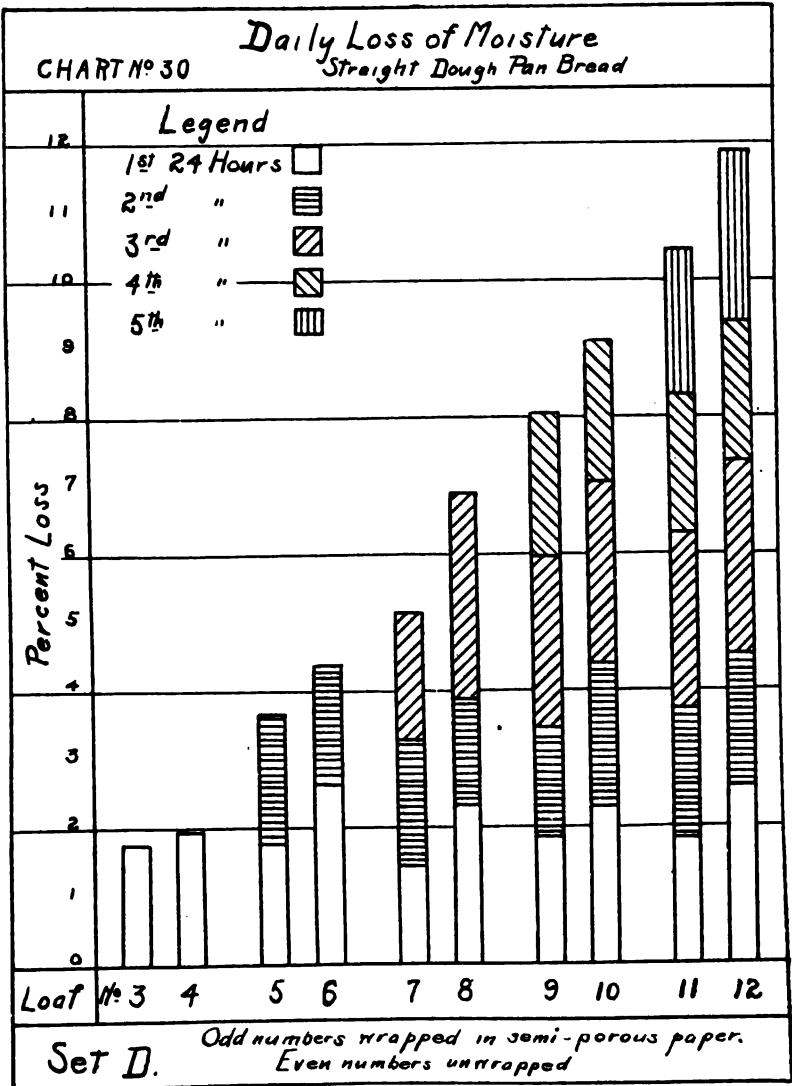


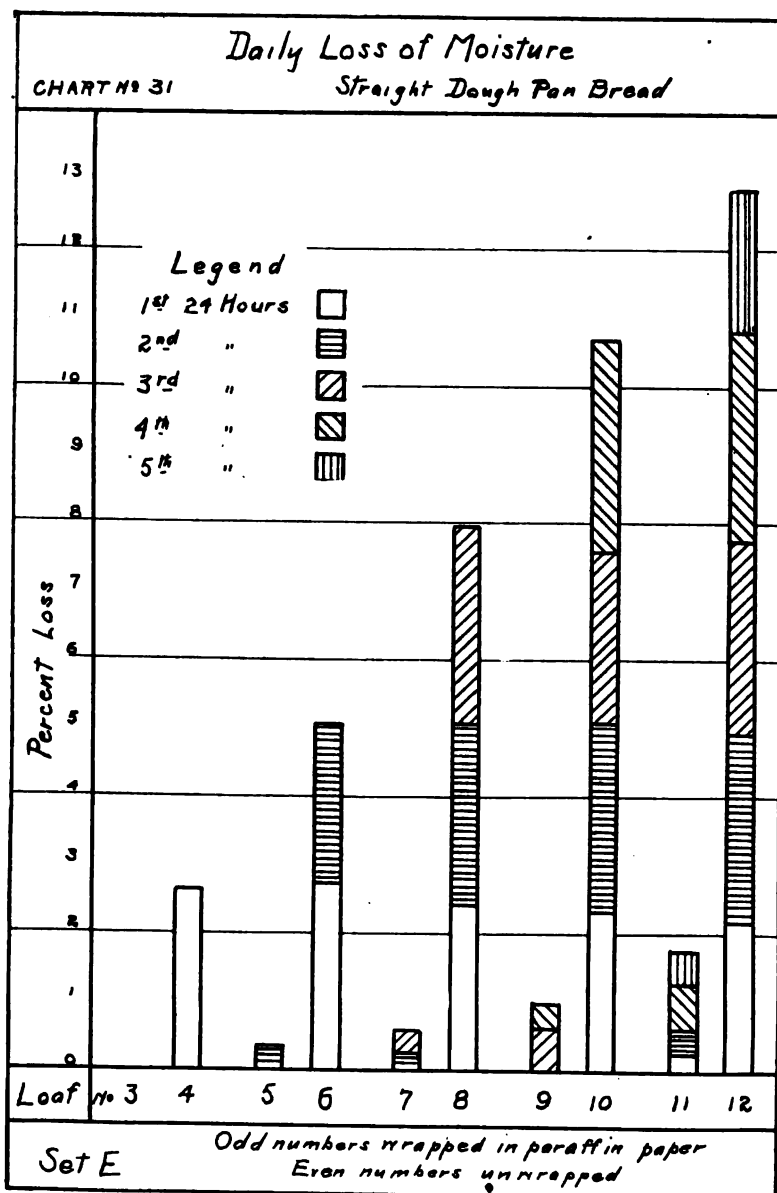
SOLUBLE CARBOHYDRATS



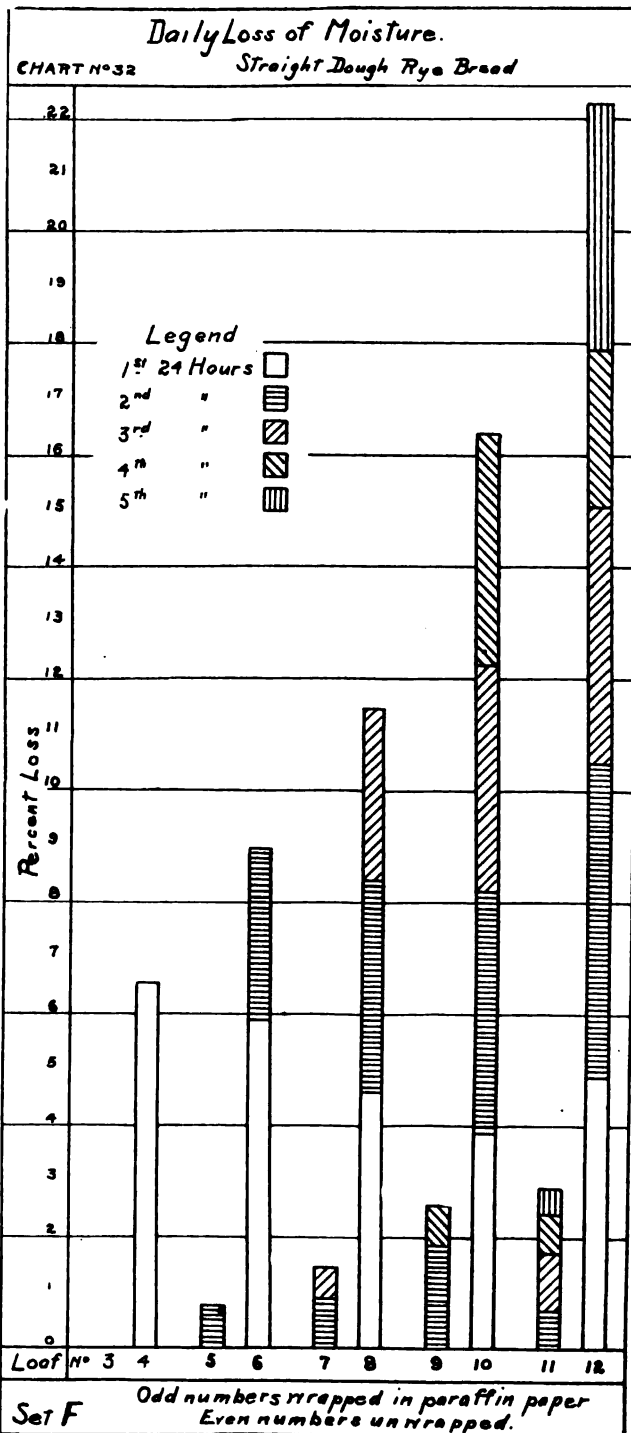
ACIDITY as LACTIC

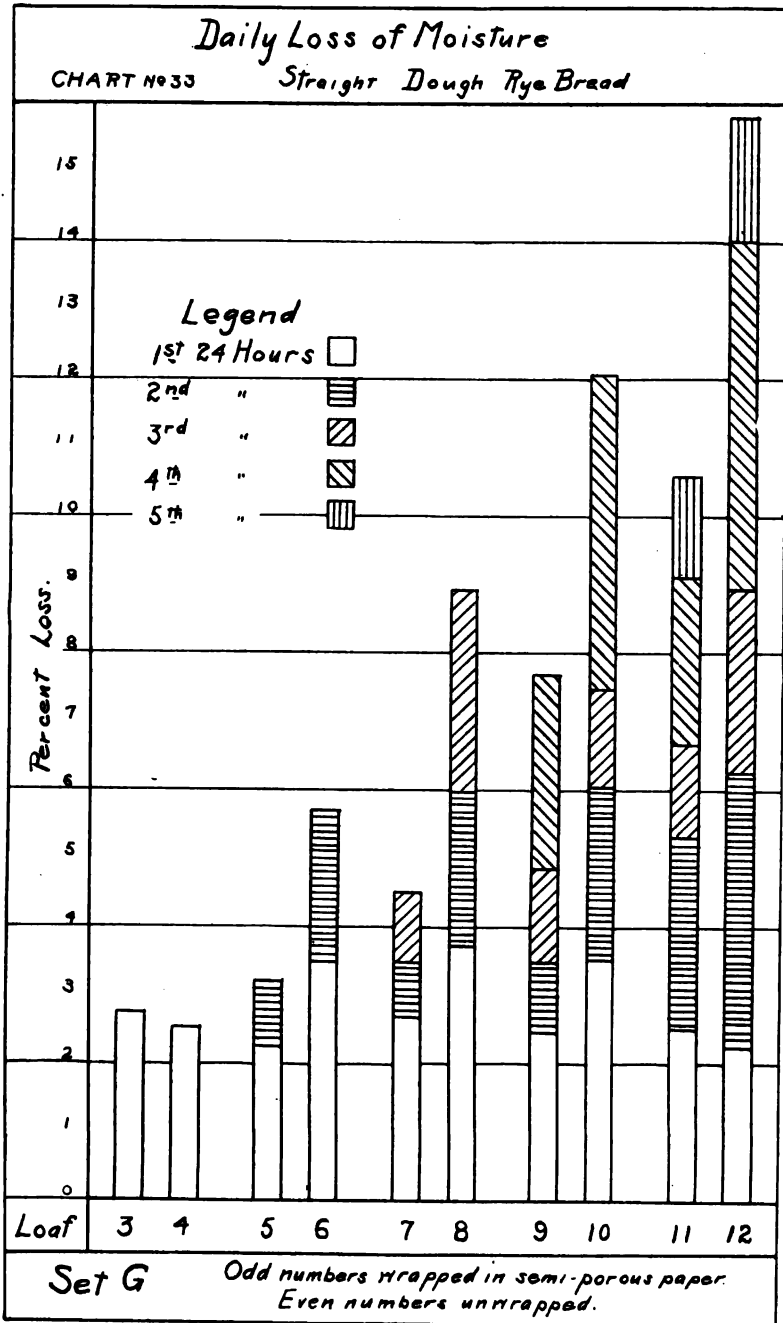


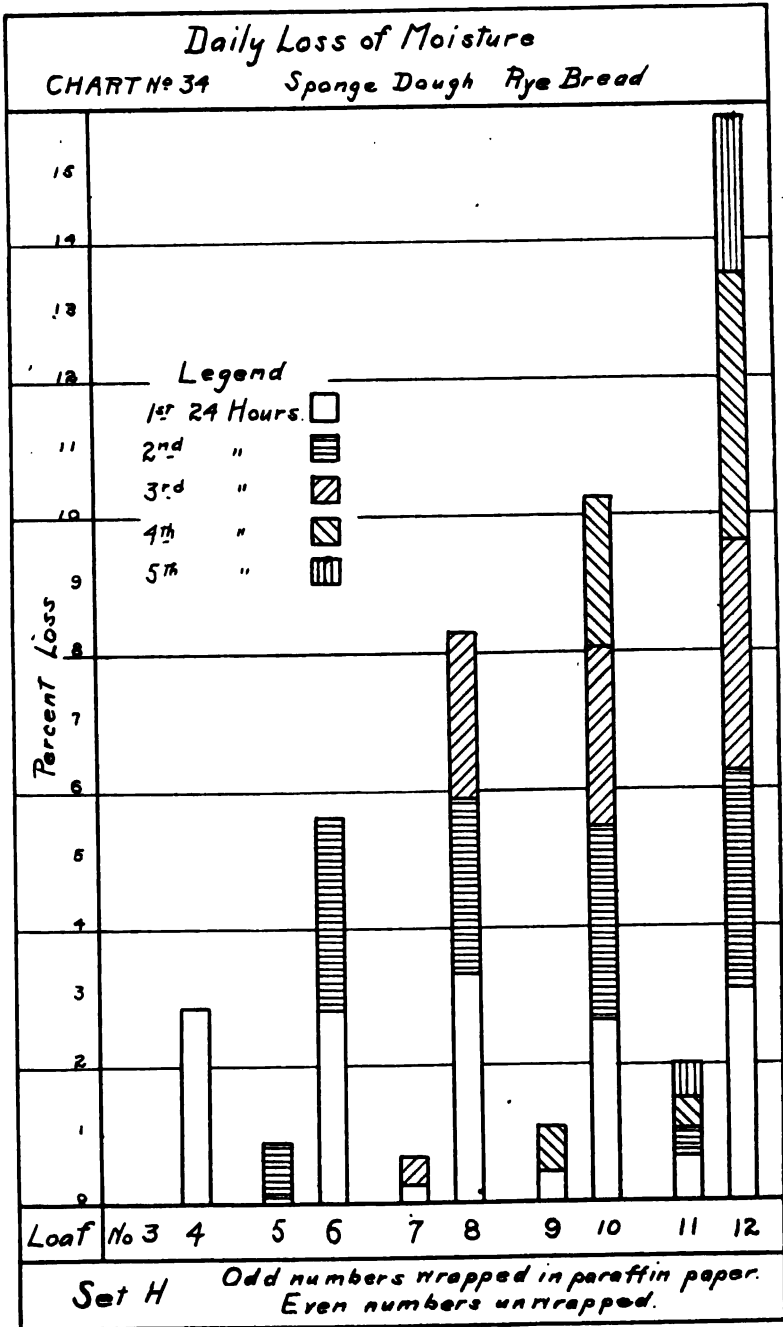


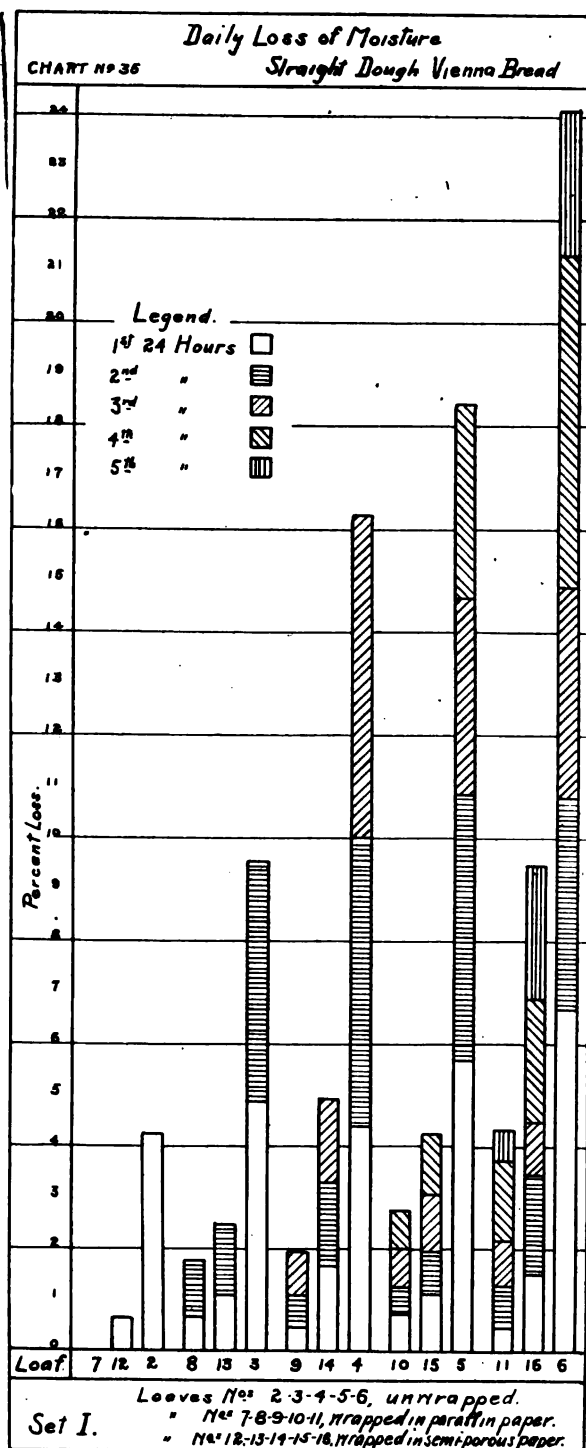


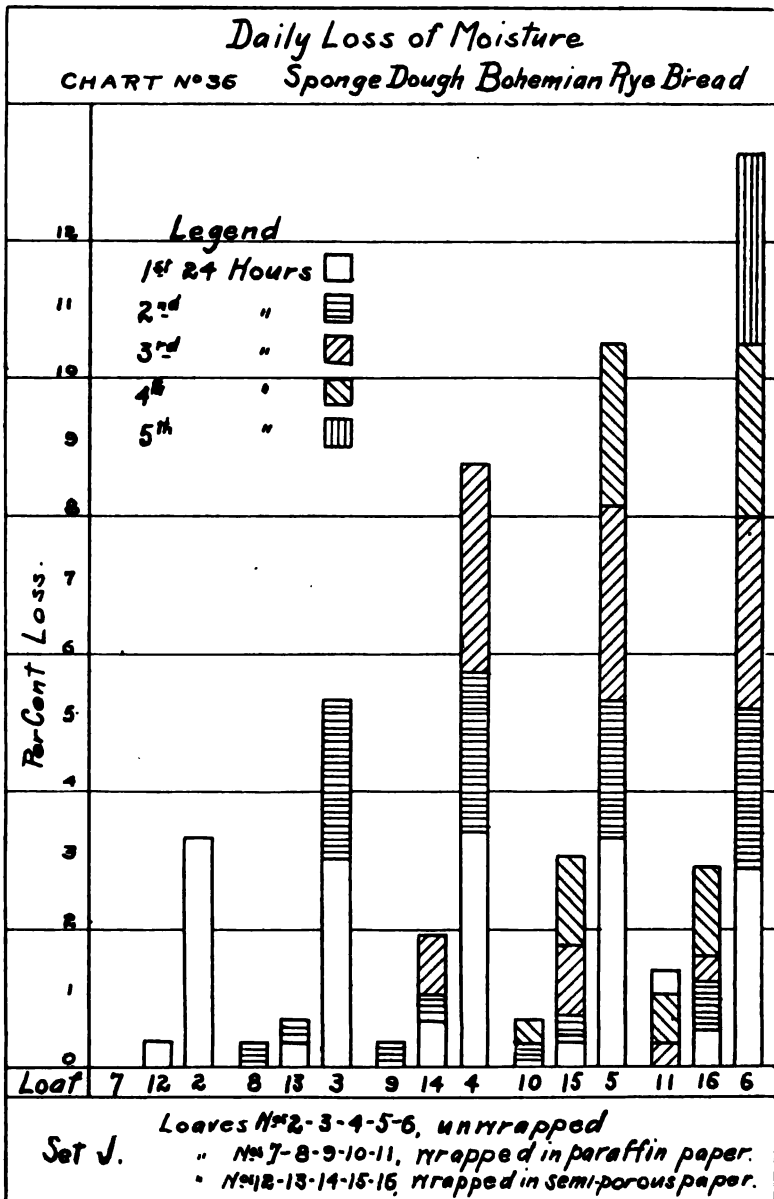












## CHART No. 37.

## PHYSICAL APPEARANCE OF BREAD WHEN ANALYZED.

## Set C.

## Straight Dough Pan Bread.

*First Day.*

## Loaf No.

- 1C. Not wrapped. Not analyzed.
- 2C. Unwrapped. Analyzed at once.

*Second Day.*

- 3C. Wrapped. Crust softened; crumb, slight yeasty odor.
- 4C. Unwrapped. Loaf drying out; crust and crumb slight stale odor.

*Third Day.*

- 5C. Wrapped. Crust softened; good odor; crumb slight yeasty odor.
- 6C. Unwrapped. Loaf drying out; crust and crumb, good odor and taste, slightly stale.

*Fourth Day.*

- 7C. Wrapped. Crust softened; crust and crumb have good odor.
- 8C. Unwrapped. Crust hard; crust and crumb losing flavor.

*Fifth Day.*

- 9C. Wrapped. Crust softened; first moulds developed at fracture of double loaf. Interior of loaf, taste and odor fair.
- 10C. Unwrapped. Crust hard; flavor of crust and crumb about gone.

*Sixth Day.*

- 11C. Wrapped. Crust still soft. A few mould colonies at fracture of loaf. Crumb has fair taste.
- 12C. Unwrapped. Crust very hard; crumb has lost odor; no foreign taste.

Chemical factors shown in Charts 6 and 7. Bread wrapped in paraffined paper.

## CHART No. 38.

## PHYSICAL APPEARANCE OF BREAD WHEN ANALYZED.

## Set D.

## Straight Dough Pan Bread.

*First Day.*

## Loaf No.

- 1D. Not wrapped.
- 2D. Unwrapped. Analyzed at once.

*Second Day.*

- 3D. Wrapped. Crust normal; crumb slight yeasty odor.
- 4D. Unwrapped. Crust firm; crumb and crust, odor and taste good.

*Third Day.*

- 5D. Wrapped. Crust moist; crumb and crust, odor and taste good.
- 6D. Unwrapped. Loaf drying out; crumb and crust, odor disappearing.

*Fourth Day.*

- 7D. Wrapped. Crust drying out; odor and taste good, crumb normal.
- 8D. Unwrapped. Loaf drying out; crust and crumb losing odor, taste stale.

*Fifth Day.*

- 9D. Wrapped. Crust slightly dryer; crumb, slight musty odor.
- 10D. Unwrapped. Crust very dry, odor of crumb almost gone.

*Sixth Day.*

- 11D. Wrapped. Crust dry; crumb not very stale, taste fair, no musty odor.
- 12D. Unwrapped. Loaf very dry; crust and crumb have fair odor, crumb dry.

Chemical factors shown in Charts 8 and 9. Bread wrapped in semi-porous paper.

## CHART No. 39.

## PHYSICAL APPEARANCE OF BREAD WHEN ANALYZED.

## Set E.

## Straight Dough Pan Bread.

*First Day.*

## Loaf No.

- 1E. Not wrapped.
- 2E. Unwrapped. Analyzed at once.

*Second Day.*

- 3E. Wrapped. Crust slightly moist; odor and taste of crumb normal.
- 4E. Unwrapped. Crust began to harden; odor and taste of crumb good.

*Third Day.*

- 5E. Wrapped. Crust very slightly moist; odor and taste of crust and crumb good.
- 6E. Unwrapped. Crust hard-crumb; odor and taste stale.

*Fourth Day.*

- 7E. Wrapped. Crust slightly moist; not much change in odor and taste of crumb.
- 8E. Unwrapped. Crust hard; odor and taste of crumb fair.

*Fifth Day.*

- 9E. Wrapped. Crust in good condition; odor and taste of crumb fair.
- 10E. Unwrapped. Loaf stale.

*Sixth Day.*

- 11E. Wrapped. Crust firm; crumb losing odor, taste poor.
- 12E. Unwrapped. Loaf very stale.

No moulds developed in either wrapped or unwrapped loaves. Loaves wrapped in paraffined paper.

One-half of loaf No. 10E, heated at 150°C for 30 minutes, was as palatable as fresh bread.



## CHART No. 40.

## PHYSICAL APPEARANCE OF BREAD WHEN ANALYZED.

## Set F.

## Straight Dough Rye Bread.

*First Day.*

## Loaf No.

- 1F. Not wrapped.
- 2F. Unwrapped. Analyzed at once.

*Second Day.*

- 3F. Wrapped. Crust slightly softened; odor and taste of crumb normal.  
No increase in acid odor.
- 4F. Unwrapped. Crust harder; odor and taste of crumb normal.

*Third Day.*

- 5F. Wrapped. Crust normal; odor and taste of crumb good.
- 6F. Unwrapped. Crust hard; not much change in crumb.

*Fourth Day.*

- 7F. Wrapped. Crust normal; odor and taste of crumb good.
- 8F. Unwrapped. Crust hard; crumb a little dryer; odor and taste fair.

*Fifth Day.*

- 9F. Wrapped. Crust better than 7F; odor and taste of crumb good.
- 10F. Unwrapped. Crust hard; crumb losing taste and odor.

*Sixth Day.*

- 11F. Wrapped. Crust almost normal; odor and taste of crumb fair.
- 12F. Unwrapped. Crust hard and dry; odor of crumb about gone.

Chemical factors shown in Charts 12 and 13. Bread wrapped in paraffined paper.

## CHART No. 41.

## PHYSICAL APPEARANCE OF BREAD WHEN ANALYZED.

## Set G.

## Straight Dough Rye Bread.

*First Day.*

## Loaf No.

- 1G. Not wrapped.
- 2G. Analyzed at once.

*Second Day.*

- 3G. Wrapped. Crust normal; odor and taste of crumb good.
- 4G. Unwrapped. Crust slightly dry; crumb, odor and taste good.

*Third Day.*

- 5G. Wrapped. Crust moist; odor and taste of crumb good.
- 6G. Unwrapped. Crust hard; odor and taste of crumb good, slightly stale.

*Fourth Day.*

- 7G. Wrapped. Crust moist; odor and taste of crumb good.
- 8G. Unwrapped. Crust very dry; crumb losing odor and taste.

*Fifth Day.*

- 9G. Wrapped. Crust moist; odor of crumb slightly stale.
- 10G. Unwrapped. Crust very dry; not much taste left to crumb.

*Sixth Day.*

- 11G. Wrapped. Crust dry; crumb becoming stale.
- 12G. Unwrapped. Crust very dry; crumb has good odor, not much taste.  
No moulds developed.

Chemical factors shown in Charts 14 and 15. Bread wrapped in semi-porous paper

## CHART No. 42.

## PHYSICAL APPEARANCE OF BREAD WHEN ANALYZED.

Set H.

Sponge Dough Rye Bread.

*First Day.*

Loaf No.

1H. Not wrapped.

2H. Analyzed at once.

*Second Day.*

3H. Wrapped. Crust normal; odor and taste of crumb good.

4H. Unwrapped. Crust began to dry out; crumb of good quality.

*Third Day.*

5H. Wrapped. Crust normal; odor and taste of crumb good.

6H. Unwrapped. Crust hard; odor and taste of crumb diminishing.

*Fourth Day.*

7H. Wrapped. Crust normal; odor and taste of crumb good.

8H. Unwrapped. Crust hard; crumb losing taste and odor.

*Fifth Day.*

9H. Wrapped. Crust toughened; odor and taste of crumb fair.

10H. Unwrapped. Crust hard; crumb drying out; odor and taste about gone.

*Sixth Day.*

11H. Wrapped. Crust toughened; odor and taste of crumb almost normal.

12H. Unwrapped. Crust very hard; crumb dry; odor and taste gone. No moulds developed.

Chemical factors shown in Charts 16 and 17. Bread wrapped in paraffined paper.

## CHART No. 43.

## PHYSICAL APPEARANCE OF BREAD WHEN ANALYZED.

## Set I.

## Vienna Style Hearth Straight Dough Bread.

*First Day.*

## Loaf No.

11. Sample analyzed at once.

*Second Day.*

21. Unwrapped. Crust hard; odor and taste of crust good.  
 71. Wrapped. Crust softened; odor and taste of crumb good.  
 121. Wrapped. Crust softened very little; odor and taste of crumb good.

*Third Day.*

31. Unwrapped. Crust hard; crumb dry; odor and taste fair.  
 81. Wrapped. Crust softened; odor and taste of crumb good.  
 131. Wrapped. Crust normal; odor and taste of crumb good.

*Fourth Day.*

41. Unwrapped. Crust very dry; crumb dry and tasteless.  
 91. Wrapped. Crust soft; crumb had stale odor and taste.  
 141. Wrapped. Crust rather hard; crumb has stale odor, tasteless.

*Fifth Day.*

51. Unwrapped. Crust dry and hard; crumb dry; odor and taste gone.  
 101. Wrapped. Crust slightly moist; crumb had stale odor and taste.  
 151. Wrapped. Crust slightly moist; crumb, odor and taste fair.

*Sixth Day.*

61. Unwrapped. Crust very dry; crumb, no taste or odor.  
 111. Wrapped. Crust soft; crumb moist; slightly stale odor.  
 161. Wrapped. Crust dry; crumb slightly moist; stale taste and odor.

Chemical factors shown in Charts 18, 19 and 20.

Loaves No. 1 to 6, inclusive, unwrapped.

Loaves No. 7 to 11, inclusive, wrapped in paraffined paper.

Loaves No. 12 to 16, inclusive, wrapped in semi-porous paper.

## CHART No. 44.

## PHYSICAL APPEARANCE OF BREAD WHEN ANALYZED.

## Set J.

## Bohemian Rye Sponge Dough Bread.

*First Day.*

## Loaf No.

- 1J. Sample analyzed at once. Crust glazed; crumb very moist.

*Second Day.*

- 2J. Unwrapped. No perceptible odor.  
 7J. Wrapped. Crust softened very slightly; crumb normal.  
 12J. Wrapped. Crust softened very slightly; crumb normal.

*Third Day.*

- 3J. Unwrapped. Not much change in crust; crumb some drier; sour taste slightly increased.  
 8J. Wrapped. Crust moist and sticky; crumb has strong acid flavor.  
 13J. Wrapped. Crust moist; crumb has strong acid flavor.

*Fourth Day.*

- 4J. Unwrapped. Crust harder; not much change in crumb.  
 9J. Wrapped. Crust moist and sticky; crumb has marked acid flavor.  
 14J. Wrapped. Crust moist and soft; not much change in crumb.

*Fifth Day.*

- 5J. Unwrapped. Crust hard; crumb dry; strong acid flavor.  
 10J. Wrapped. Crust soft; no change in crumb.  
 15J. Wrapped. Crust soft; crumb has not changed much.

*Sixth Day.*

- 6J. Unwrapped. Crust very hard; crumb dry; breaking away from crust.  
 11J. Wrapped. Crumb soft and moist; many moulds present; crumb free from moulds.  
 16J. Wrapped. Crumb soft; rather dry; a few moulds appearing; crumb free from moulds.

Chemical factors shown in Charts Nos. 21, 22 and 23.

Loaves No. 1 to 6, inclusive, unwrapped.

Loaves No. 7 to 11, inclusive, wrapped in paraffined paper.

Loaves No. 12 to 16, inclusive, wrapped in semi-porous paper.

## CIRCULAR LETTERS AND LETTERS OF INFORMATION.

To facilitate the enforcement of the several laws, and as well to explain the provisions of the laws and assist manufacturers and dealers in complying with them, it has been the practice of the department to issue circular letters. These letters are sent to the person or trade interested and are given general publicity by the press of the State.

During the year past a number of such letters have been promulgated, and as well special letters of inquiry addressed to health officers and public officials. Such notices and letters as are of special interest follow herewith.

### NOTICE TO BUTCHERS, STOCK BUYERS AND DEALERS IN MEATS.

"Meat is clean, sound, dressed and properly prepared part of animals in good health at time of slaughter \* \* \*."

Animals with tuberculosis or hog cholera are not in good health and do not make sound meat, and such meat cannot be sold except in violation of the Pure Food Law and of the special law prohibiting the killing of and the sale of meat from sick animals.

The too common practice of selling tuberculous cows and hogs suffering from cholera at public stockyards from which they are taken for slaughter for food by vicious and depraved butchers is a serious menace to the public health and a crime that, if appreciated in its repulsiveness by meat consumers, would destroy the desire for beef and pork.

The laws prohibiting the practice are comprehensive and efficient. They only require enforcement to place the farmer who sells cholera hogs, the butcher who kills them and the dealer who retails the meat in jail, or beyond the ban of decent citizenship.

If you have knowledge of the sale or slaughter of diseased animals report the fact to the local health officer, and also to the State Food Commissioner.

County, City and Town Health Officers, State Food Inspectors and all other officers whose duty it is to enforce the Pure Food Law, will be governed by this notice.

H. E. BARNARD,  
State Food and Drug Commissioner.

September 10, 1914.

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### NOTICE TO GROCERS AND EGG DEALERS.

The Cold Storage Law provides that when eggs that have been in cold storage for thirty days are sold at retail "there shall be placed in or on the receptacle containing them, in full view of the public, a card not smaller than six inches in width by six inches in length, upon which shall be printed the words 'cold storage', in plain gothic letters not less than two inches in length, and the wrapper, bag or container in which said eggs are

delivered to the purchaser by the retailer shall be plainly stamped with the words 'cold storage.' Neglect to comply with these provisions subjects the person, firm or corporation responsible to a fine of not less than twenty-five dollars, and it is made the duty of all food and health officials to see that the law is enforced. Any evasion or neglect will not be tolerated.

Your attention is further called to the Renovated Butter Law which requires that all butter produced by rechurning or reworking packing stock or other butter shall bear the words "Renovated Butter" or "Process Butter" in bold-faced letters at least three-fourths of an inch high. This statement shall be made on the top and sides of the receptacle, package or wrapper in which it is kept for sale or sold.

If butter is exposed for sale uncovered, then a placard bearing the words "Renovated Butter" or "Process Butter" shall be attached to the mass of butter in such manner as to be easily seen or read. Violation of this law is punishable by a fine of not less than twenty-five dollars.

Yours very truly,

H. E. BARNARD,

State Food and Drug Commissioner.

November 15, 1913.

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#### NOTICE TO EGG BUYERS, MERCHANTS, HUCKSTERS, AND OTHERS ENGAGED IN THE PRODUCTION AND HANDLING OF EGGS.

Complaint is being made that that section of the Pure Food Law prohibiting the sale of decomposed, putrid or rotten food is constantly violated by the sale of bad eggs. You are advised that farmers and dealers who sell, or have in their possession for sale, eggs which are not sound are liable to prosecution for violation of the Pure Food Law. For your own protection buy loss off and handle only candled eggs.

Print and distribute widely the following notice:

#### WARNING.

#### BAD EGGS.

*The Indiana Pure Food Law Forbids the Sale or Offering for Sale of Eggs which are in Any Degree Decomposed, Putrid or Rotten, by Paragraph 4 of Section 2 of the Law which reads:*

"An article shall be deemed as adulterated: In case of food \* \* \* if it consists in any proportion of filthy, decomposed, putrid or rotten animal \* \* \* substance."

Section 4 makes it the duty of all peace and health officers to seize eggs found to be unwholesome and which are intended for sale or offered for sale.

Section 10 of the act provides "That \* \* \* any person, persons, firm or corporation violating any of the provisions of this act, shall upon conviction for the first offense, be punished by a fine of not less than \$25.00 nor more than \$30.00; for the second offense, by a fine of not less than \$25.00 nor more than \$100.00; and for the third and subsequent offenses, by a fine of \$100.00 and imprisonment in the county jail for not less than thirty nor more than ninety days."

Inspectors of the Food and Drug Department of the State Board of Health and all county, city and town health officers are instructed to enforce these provisions of the law.

Egg producers, dealers and shippers will take notice that the sale of bad eggs, or of stale or storage eggs as fresh eggs is in violation of the law, and that prosecutions will be instituted wherever evidence of violations can be secured.

H. E. BARNARD,

State Food and Drug Commissioner.

Indianapolis, Ind., July 20, 1914.

#### NOTICE TO MANUFACTURERS AND DEALERS IN ICE.

Your attention is called to Section 10 of the Weights and Measures Law, which reads as follows:

"All commodities shall be sold by standard weight or measure. \* \* \* Any person, firm or corporation, who by himself, or by his servant, or as the servant or agent of another, violates the provisions of this section shall be guilty of a misdemeanor and shall be punished upon conviction by a fine of not less than ten dollars nor more than one hundred dollars, to which may be added imprisonment in the county jail for not more than three months, upon first conviction, and upon second or subsequent conviction, he shall be punished by a fine of not less than twenty-five dollars, nor more than five hundred dollars, to which may be added imprisonment in the county jail for not more than six months."

Acting under the authority conferred upon me as Commissioner of Weights and Measures, I have instructed the inspectors of weights and measures operating in the cities and counties of this State, to require that all ice shall be weighed on delivery on scales which have been tested and sealed. I have further instructed such inspectors to require that the customers be delivered the amount of ice for which they are charged. In other words, the delivery man or driver of the ice wagon must weigh each cake of ice immediately prior to placing it in the ice box and charge for that weight.

I have further instructed such inspectors to allow the use of the coupon book in payment for ice only when the unit check is five pounds or less. The practice heretofore frequently followed of selling coupon books containing twenty-five and fifty pound checks is fair neither to consumer nor ice man and makes it impossible for either party to get or give full value. Delivery men and drivers should be instructed to take checks in units of not more than five pounds to the nearest weight shown by scale at the time of delivery. That is, if forty-seven pounds of ice is delivered, checks to the amount of 45 pounds should be taken; if 48 pounds of ice is delivered, checks to the amount of 50 pounds should be taken; if 52 pounds of ice be delivered, 50 pound checks should be taken; if 53 pounds, 55 pound checks.

In ordering check or coupon books, or in arranging for next season's business, please see to it that these instructions are carefully complied



with to the end that the business of handling ice may be conducted on the same lines as those followed in the case of other commodities.

Yours very truly,

H. E. BARNARD,  
State Food and Drug Commissioner.

November 15, 1913.

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## LETTERS TO MAYORS AND HEALTH OFFICERS.

INDIANAPOLIS, May 28, 1914.

My Dear Mayor—

For a number of years the State Board of Health has made a careful study of the conditions under which slaughterhouses are operated and of the character of the meat produced therein. For this study we have used the results of several thousand sanitary inspections made by the State Food Inspectors, a very complete survey of the slaughterhouses of the State made by local health officers, and the reports made to the department by the Bureau of Animal Industry of the United States Department of Agriculture.

In order that we may not overdraw conditions we shall quote, not from our own report, but from Circular 185 of the Bureau of Animal Industry, prepared by Dr. A. D. Melvin, Chief of the Bureau, for his statements express most clearly the average conditions not only in Indiana, but throughout the country.

"Uninspected slaughterhouses as a rule have many features that are not only objectionable but dangerous to health. The smell of the country slaughterhouse is proverbial, and the conditions at some of these places are inexpressly foul and filthy. They are usually located in some out-of-the-way place, sometimes outside the corporate limits, often surrounded by stables or even being a part of a building which is also used as a stable, barn, or for some such purpose. Sometimes they are located on the banks of small streams and pollute the water. Such places are often the means of spreading disease. It is frequently the custom to feed offal to hogs or to throw it where dogs, hogs, and rats have access to it. By this means trichinas, tapeworms and other parasites are disseminated, some of which are dangerous to man. Hog cholera, tuberculosis, and other contagious diseases may also be spread by such conditions. Usually there is no protection to the meat against rats, flies, and other insects and vermin, and this condition constitutes a dangerous source of contamination and infection.

"The objectionable conditions are not confined to the little slaughterhouses in small communities. Even in some of the large cities there are large abattoirs which do a purely local business and at which the conditions and methods are exceedingly unsanitary and where a very poor class of live stock is slaughtered.

It is estimated that at least 10 per cent. of the dairy cows in this country are affected with tuberculosis, and it is a well-known fact that dairy stock forms a much larger proportion of the animals killed at the small local slaughterhouses than at the large establishments under Fed-

eral inspection. One effect of the Federal inspection has been to cause the owners of diseased or suspicious-looking animals to send them for slaughter to an uninspected place rather than to an establishment where they would have to run the gantlet of strict inspection. *For these reasons it is certain that the percentage of diseases is considerably higher among animals slaughtered at the small local places than among those slaughtered under Federal inspection."*

These conditions clearly call for abatement or at least more sanitary control than that afforded at present. *This can be done only by establishing municipal or central slaughterhouses* at which the slaughtering for each community is done at one place which is properly built, well equipped and operated under the supervision of a competent veterinarian or inspector.

Municipal abattoirs are quite common in Europe; they are being built in large numbers in Canada and are in operation in a number of cities in this country. I believe that as mayor of your city you can do nothing during your term of office which will be of greater value to your citizens than to put on foot plans for a more satisfactory control of your meat supply.

The officials of the Department of Agriculture summarize the necessity for regulated slaughterhouses as follows:

1. A well-regulated system of slaughterhouses is as necessary to the *public health* as is a well-regulated system of schools to the *public education*.

2. Every slaughterhouse is a center of disease for the surrounding country, spreading trichinosis, echinococcus disease, gid, wireworm, and other troubles caused by animal parasites, and tuberculosis, hog cholera, swine plague, and other bacterial diseases.

3. The important factors concerned in spreading these diseases are offal feeding, drainage, rats and dogs.

4. These diseases may be greatly held in check and in some cases entirely eradicated in two ways: First, by a reduction in the number of premises on which slaughtering is allowed, on which account *it is urged as all important that there be a segregation of the slaughterhouses, so that all the butchers of any given town will be compelled to do all their killing in a common inclosed and restricted area*. Second, by regulating the factors concerned in spreading the disease: (a) Offal feeding should be abolished; (b) drainage should be improved; (c) rats should be destroyed; and, (4) dogs should be excluded from slaughterhouses.

5. The appointment on every local board of health of a competent veterinarian, whose duty it shall be to control the class of meat placed upon the block. *All meats should be inspected at the time of slaughter, thus securing for the local consumer the same guaranty that the National Government provides for the foreign consumer and for interstate trade.*

As to whether or not your city should build a municipal abattoir is a matter to be determined by local conditions. It is quite possible that the butchers themselves can be induced to unite in the construction of an

abattoir which may be operated under official supervision. The expense of building a municipal plant could be very well met by an issue of bonds, and a sinking fund for the payment of these bonds could be created by setting aside a portion of the revenue. There should be a system of fees or charges to provide an income sufficient to pay the cost of operating and maintaining the abattoir and the cost of inspection, and to meet interest and provide a sinking fund in case bonds have been issued. A certain sum per head could be charged for killing in case the entire operations were carried on by the management of the abattoir, or the butchers could be permitted to bring their stock to the abattoir and do the work there themselves by paying a certain sum per head for this privilege. This is a system that is followed so successfully in England; in a thousand German cities; in all French cities; in Cleveland, Nashville and other cities in this country.

In order that you may have more complete information on this subject, under separate cover we are sending you an interesting pamphlet entitled "Municipal Abattoirs"; a page from the Indianapolis News showing Government inspection work in Indianapolis, and we are asking the Department of Agriculture to forward you two circulars, one of which discusses the need of such "Municipal Meat Inspection to Supplement Federal Inspection", and the other "State and Municipal Meat Inspection and Municipal Slaughterhouses". I shall be glad also to have you obtain Bulletin No. 173, "Municipal Abattoirs", published by the Kentucky Agricultural Experiment Station at Lexington, Kentucky. This is a very comprehensive report and contains plans, estimates, model ordinances and other information which will be interesting and helpful to you.

The State Board of Health will gladly co-operate with you in the development of any plans for a more satisfactory control of your meat supply. We appreciate the fact that the State is not prepared to supplement federal inspection by state inspection, and it is probable that the necessary inspection may best be worked out by municipalities. We believe this can be done without injury to the business of local butchers. Indeed, we think they will profit greatly by the adoption of plans by which the wastes of their present business methods may be eliminated, and that they will also be exempt from the criticism of selling uninspected meats, which at the present time in many cities results in an unequal competition with the inspected meats of the Government controlled abattoirs.

May we not have the opportunity of discussing the development of Municipal Abattoirs with you at length, and of perhaps assisting in the drafting of suitable ordinances, the development of plans and the creation of a public sentiment which will result in the abandonment of unsanitary slaughterhouses and the sale of sound and wholesome meat?

Yours very truly,

H. E. BARNARD,  
State Food and Drug Commissioner.

INDIANAPOLIS, May 28, 1914.

My Dear Doctor:

The State Board of Health is convinced that something must be done to improve the conditions under which the meat supply of the State is slaughtered and prepared. We must devise some means by which we can secure for the local consumer the same guaranty of fitness for food that Government inspection affords.

A few cities in the State have for some time provided local meat inspection, but, so far as we know, there are no municipal slaughterhouses in operation in Indiana. We believe that the time is ripe for serious consideration of the advisability of municipal slaughterhouses.

It may be that you have already taken up this subject with your mayor. If you have done so, will you please discuss with him the plan suggested in the enclosed letter which we shall be glad to have you hand to the mayor if your city is not already well served. May we also urge that when you discuss this matter with the mayor you impress upon him the necessity for action and the opportunity he may have during his term of office of doing something for the community that will stand, as it were, a monument to his administration.

We enclose an addressed envelope in order that you may tell me what the mayor thinks of the proposition, and whether or not it will be possible either on his initiative or because of an insistent demand for protection on the part of the consumer to provide an inspected and regulated meat supply.

Yours very truly,

H. E. BARNARD,  
State Food and Drug Commissioner.

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INDIANAPOLIS, September 14, 1914.

My Dear Mayor:

We are approaching the hog cholera season and within the next three months many thousands of hogs suffering from cholera will have been sold, slaughtered and used as food in this State, in every case in violation of the law and of common decency. The situation does not appear to be as serious as it was a year ago. Nevertheless, hog cholera is prevalent and your market is bound to receive diseased animals unless special pains are taken to exclude them.

Will you advise me whenever you know of shipments of diseased hogs, either to or from your city, in order that they may be intercepted and the shipper perhaps prosecuted for violation of the laws. The sale for food of diseased hogs and cattle must be stopped and we trust in our efforts to do this we may receive your hearty support.

Yours very truly,

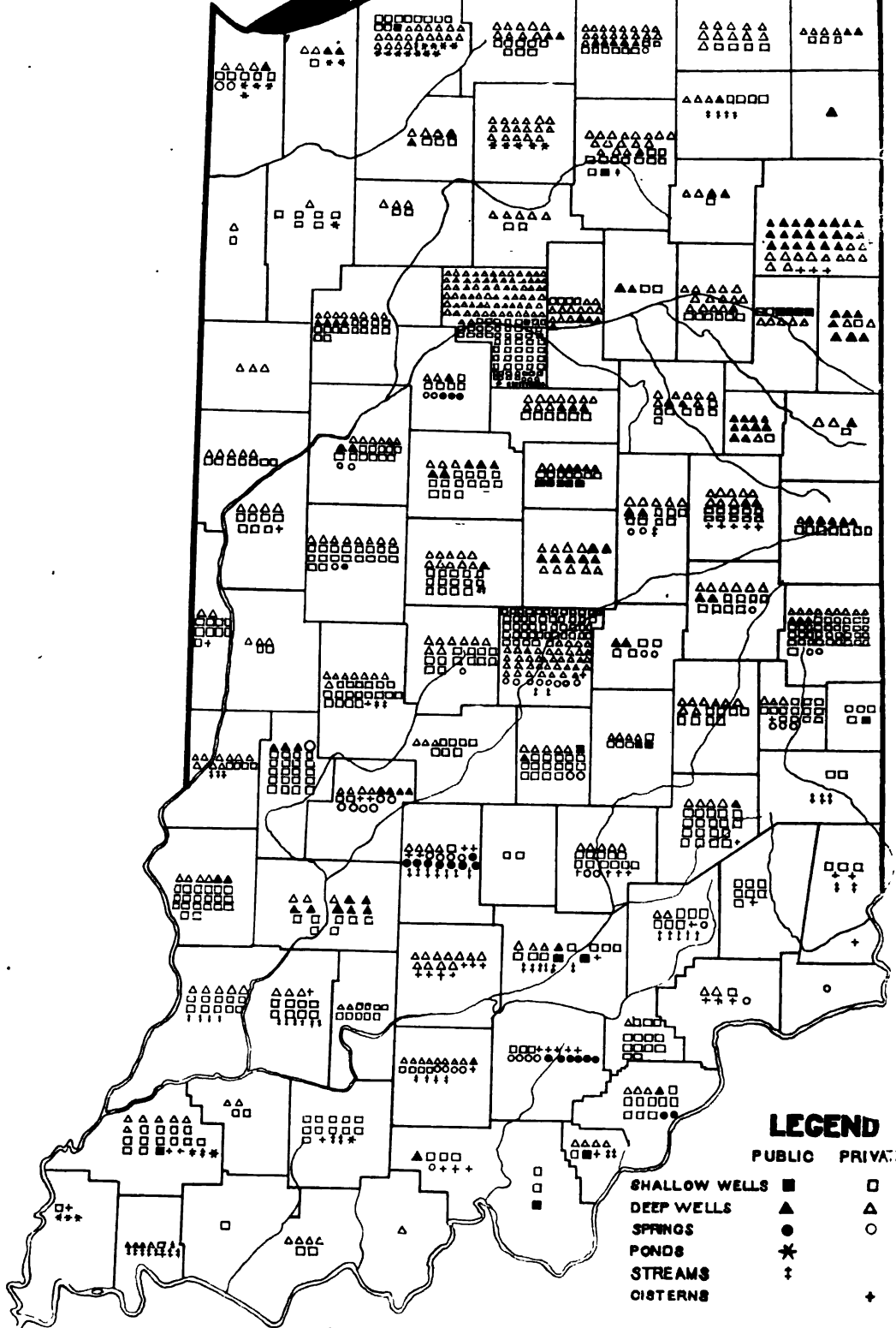
H. E. BARNARD,  
State Food and Drug Commissioner.



# Report of the Water Laboratory, 1914

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H. E. BARNARD, Ph. D.



## WATER SAMPLES ANALYZED

OCTOBER 1-1913 to OCTOBER 1-1914

## REPORT FROM THE WATER LABORATORY.

H. E. BARNARD, PH.D.

In 1912, 1,164 samples of water were examined at the laboratories. In 1913 this number was increased to 1,611. In 1914, 1,645 samples were analyzed. This is the largest number of samples analyzed during any one year since the laboratories were established, and is good evidence of the increased interest taken by health officers and householders in the quality of the water supply.

Of the 1,645 samples analyzed, 702 were collected from so-called shallow wells; 656 from deep wells; 96 from streams; 84 from springs; 48 from cisterns; 27 from lakes and ponds and 32 from miscellaneous sources not otherwise recorded. One thousand three hundred and forty-two of these samples were from private supplies, from the most part private wells. Three hundred and three samples were from public supplies. Of the total number examined 1,021 waters were reported as good, 414 as bad and 210 as doubtful. In percentage terms 62% of all of the waters examined were of good quality; 25.1% bad and 12.9% as doubtful. These figures show a slight improvement over those of other years in that the percentage of good waters is but little higher.

Of the private water supplies examined 509 were taken from deep wells; 684 from shallow wells; 48 from cisterns; 69 from springs and 32 from miscellaneous sources. Seven hundred and sixty-seven of all the samples examined were potable, 381 were condemned as bad and 194 were classed as doubtful. Of the 509 deep wells analyzed 426 are furnishing water of good quality, 36 were reported as bad and 47 as doubtful.

Of the 684 shallow wells however, but 246 furnished potable water, 308 or almost 50% were unqualifiedly bad and 130 were doubtful.

Of the 48 cistern waters analyzed 22 were good, 21 bad and 5 doubtful.

Of the 69 spring waters 49 were good, 10 bad and 10 doubtful. These figures bear out most consistently the comment made in other years that the shallow well as a source of private water supply is



greatly to be feared and in more than 60% of the cases investigated has been found to be furnishing a polluted water.

Of the 303 public supplies examined 147 were taken from deep wells, 18 from shallow wells, 96 from streams, 27 from ponds and lakes and 15 from springs. Of the 147 deep wells examined 142 were good, 3 were bad and 2 were doubtful.

Of the 18 shallow wells examined 17 were good and one bad.

Sixty-seven of the 96 stream supplies examined were potable, 20 were bad and 9 were of doubtful quality.

Twenty-two of the 27 pond supplies were good, 2 were bad and 3 doubtful.

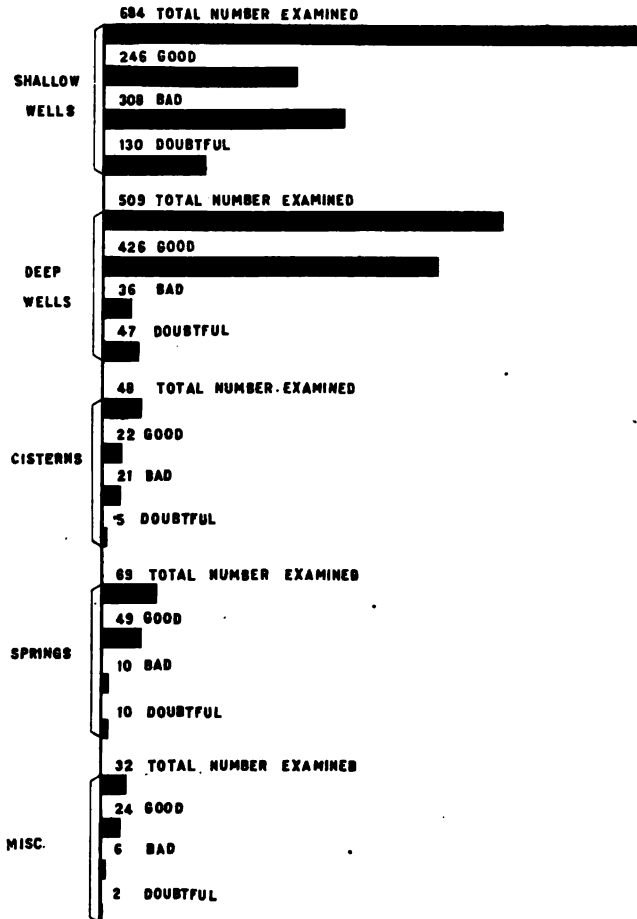
Of the 15 stream supplies examined 6 were good, 7 bad and 2 doubtful.

From this report it will be seen that the public supplies are on the whole of good quality; waters from deep and shallow wells being in nearly every case potable. The water from streams however, is not always pure and it is worthy of comment that more spring supplies are classed as bad than good.

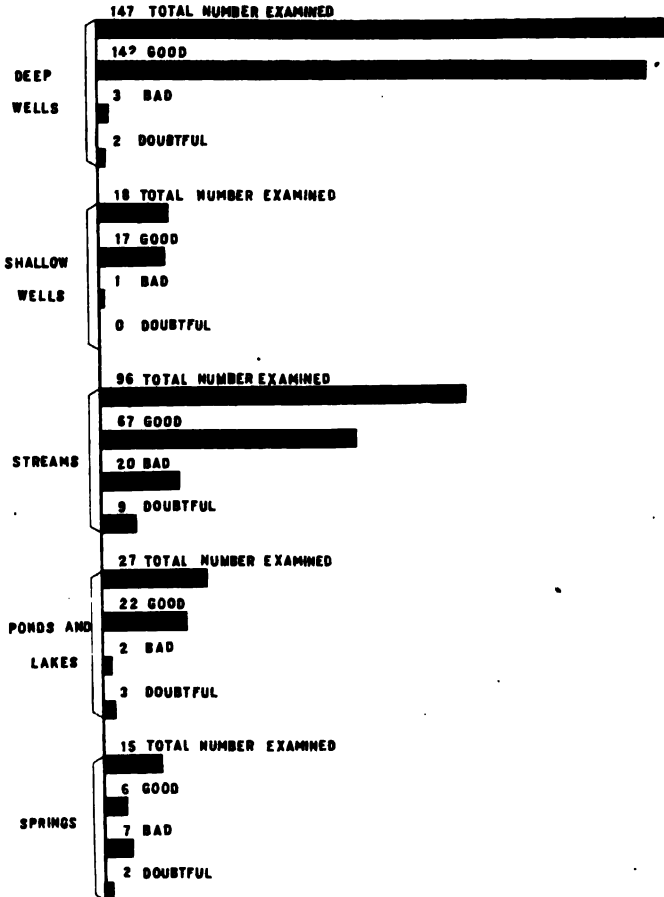
An interesting tabulation has been made showing the source and number of water samples analyzed since the laboratories were established. During these years 9,437 samples have been examined. To do this work the service of several chemists have constantly been needed. When we realize that there are probably 500,000 water supplies in use throughout the state what we have been able to accomplish seems but small in comparison with the work remaining to be done.

Aside from the routine work of the Water Laboratory the important work of the year has been the completion of a sanitary survey of the city of Vincennes which included a careful chemical and bacteriological analysis of every private water supply in the city. This comprehensive work is elsewhere reported.

# CONDITION OF PRIVATE WATER SUPPLIES IN INDIANA 1914



# CONDITION OF PUBLIC WATER SUPPLIES IN INDIANA 1914

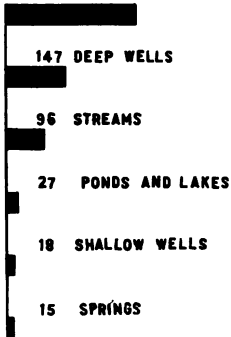


# WATER SUPPLIES IN INDIANA

## PUBLIC SUPPLIES

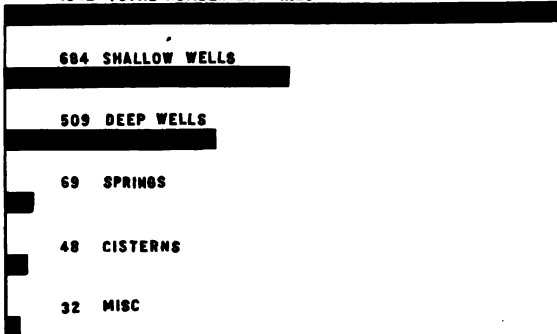
1914

303 TOTAL NUMBER EXAMINED



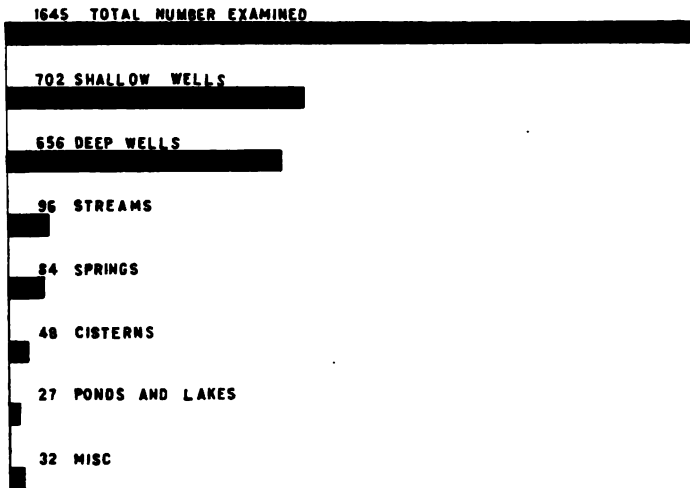
## PRIVATE SUPPLIES

1342 TOTAL NUMBER EXAMINED

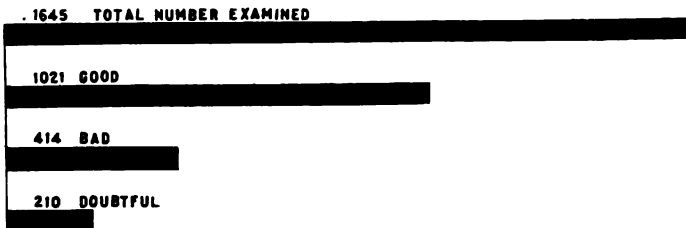


# WATER SUPPLIES IN INDIANA

1914



## QUALITY OF SUPPLIES



TABULATION SHOWING SOURCE AND NUMBER OF WATER SAMPLES ANALYZED, 1906-1914.

SOURCE.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Total.
Deep wells.....	207	221	288	269	341	293	334	592	656	3,201
Shallow wells.....	380	257	419	478	381	573	616	764	702	4,570
Cisterns.....	27	18	27	21	32	40	31	59	48	303
Springs.....	26	23	47	51	31	60	59	66	84	447
Streams.....	18	67	33	38	19	28	66	94	96	459
Ponds and lakes.....	8	18	36	19	17	21	42	22	27	210
Miscellaneous.....	18	15	68	46	0	38	16	14	32	247
Total.....	684	619	918	922	821	1,053	1,164	1,611	1,645	9,437

## WATER FILTRATION PLANTS IN INDIANA.

JOHN C. DIGGS.

With the gradual increase in population all of the surface waters of Indiana have become subject to pollution. The demand for water for public supplies in parts of the State, however, is so great that some of these surface waters must be used.

In most parts of the northern half of the State, which is overlaid with a thick mantle of glacial drift, underground water supplies are obtainable. Even in this section, with the increased growth of the cities and the demand for a greater water supply, accompanied by the gradual lowering of the water level, it seems only a question of time until the larger cities will have to turn to a surface supply. South Bend and Ft. Wayne are examples of such cities.

In the southern half of the State the glacial drift is thin or entirely lacking. Water, if obtainable at all, is usually impregnated with mineral matter so as to render it unfit for use as a public supply. Cities and towns in this section of the State must therefore turn to surface supplies.

Practically all analyses made of samples of water from the surface waters of Indiana, including samples taken from Lake Michigan, show that these waters are unsafe as public supplies. Even if safe, from a sanitary standpoint, they would be undesirable on account of the high turbidity which prevails during certain times of the year.

There are within the State fourteen water filtration plants in operation which produce water for the public supplies of the cities.

The first water filtration plant in Indiana was installed at Terre Haute in 1889. This plant consisted of twelve National vertical pressure filters 10 feet in diameter, with a total capacity of 4,000,000. This plant with ten additional horizontal filters continues to purify the Terre Haute city supply.

#### SLOW SAND FILTRATION.

The only filter of the slow sand type in operation in the State is located at Indianapolis. This plant was first put in operation in 1904. The plant has a filtering surface of 9.6 acres with a capacity of thirty million gallons. The supply is taken from White River at a point ten miles above the city and conveyed to the filter plant by means of an earthen canal. A sedimentation basin with a capacity of 45,000,000 gallons is provided.

#### MECHANICAL FILTRATION.

*Pressure Filters.*—Filters of this type are in operation at Terre Haute and French Lick. Some of the Terre Haute filters have been in operation since 1889 and have produced a very satisfactory effluent. Filters of this type are also used at Muncie to remove iron from the water after a preliminary treatment by aeration.

*Mechanical Gravity Filters.*—By far the greater number of filtration plants in Indiana fall under this classification. The plants at Seymour and Aurora are of the New York Continental Jewell type. The filters were originally used at the St. Louis Exposition in 1903. The plant at Logansport will probably be put in operation about January 1, 1915.

#### LABORATORY CONTROL.

It is needless to say that for plants which are obtaining their supply from a source of doubtful purity, it is necessary that the operator of the plant knows to just what extent he is removing the impurities from the water. Such a control is impossible unless samples are tested daily to determine the bacterial content of the filtered water. Unfortunately, not all Indiana purification plants are equipped with control laboratories. However, nearly all built in recent years are being constructed with the understanding that the chemical and bacterial laboratory is as essential for efficient operation as is the installation of proper pumping machinery.

## WATER FILTRATION PLANTS IN INDIANA.

CITY.	Population, 1910 Census.	Source of Supply.	DESCRIPTION OF PLANT.					Average Daily Consumption.	Population Using Supply.	Filters In- stalled.
			Number of Units.	Gallons Capacity, Each Unit.	Capacity of Plant.	Capacity of Sedimenta- tion Basin.	Coag. Used.	Chemical Treat- ment.		
Indianapolis*	233,650	White River.	6	5 million.	30 million.	45 million.	Alum.	Hypo.	180,000	1904
Evansville	99,647	Ohio River.	12	1 million.	12 million.	2.5 million.	Alum.	Hypo.	55,000	1912
Terre Haute.	53,157	Wabash River.	(10) (12)	481,000 .5 million.	8 million.	.7 million.	Alum.	Hypo.	30,000	1889
Muncie*	24,005	Buck Creek.	6	1 million.	3 million.	1.75 million.	Alum.	Hypo.	22,000	1906
Anderson.	22,474	White River.	5	1 million.	5 million.	.5 million.	Alum.	Hypo.	18,000	1906
Logansport.	19,050	Eel River.	8	1 million.	8 million.	1.0 million.	Alum.	Hypo.	15,000	1915
Vincennes.	14,895	Wabash River.	4	.8 million.	6.4 million.	.3 million.	Alum.	Hypo.	5,000	1898
Columbus.	8,813	White River.	4	1 million.	4 million.	1.0 million.	Alum.	None.	6,000	1913
Washington.	7,854	White River.	3	.5 million.	2.1 million.	.13 million.	Alum.	Hypo.	6,300	1907
Valparaiso.	6,987	Flint Lake.	3	.7 million.	2.1 million.	.09 million.	Alum.	Hypo.	6,000	1907
Seymour.	6,305	White River.	4	.5 million.	2 million.	.1 million.	Alum.	None.	4,500	1904
Mt. Vernon.	5,583	Ohio River.	4	.5 million.	2 million.	.1 million.	Alum.	None.	4,950	1898
Aurora.	4,410	Ohio River.	2	.5 million.	1 million.	1.0 million.	Lime and iron	Hypo.	3,000	1904
French Lick, W. Baden	2,549	Lost River.	2	.3 million.	.6 million.			Hypo.	2,000	1912

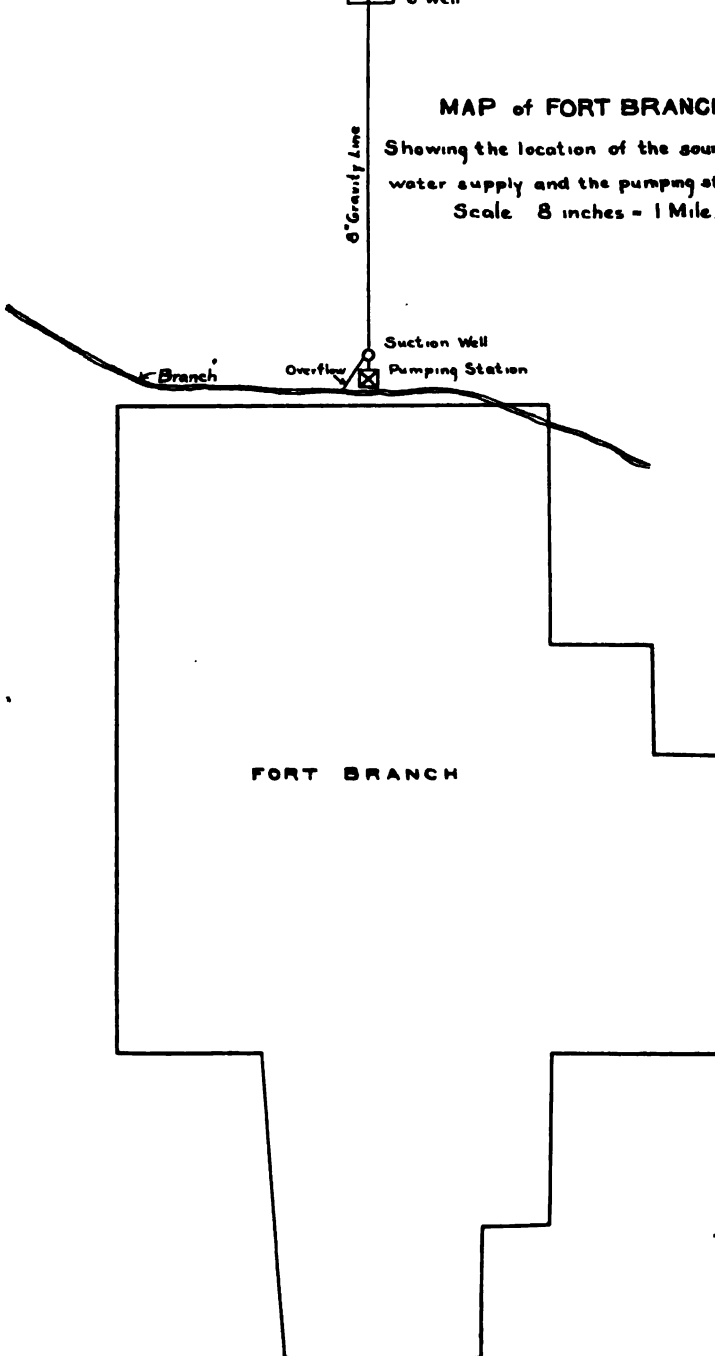
\*Additional supply obtained from wells.



9-6" Wells  
6' well

# MAP of FORT BRANCH

Showing the location of the source of  
water supply and the pumping station.  
Scale 8 inches = 1 Mile.



INVESTIGATION OF THE WATER SUPPLY OF FORT  
BRANCH.

J. A. CRAVEN.

In response to the request of Dr. W. F. Morris, Health Officer of Fort Branch, Indiana, the State Board of Health has caused an investigation of the water supply of the town on October 6, 1913.

The Fort Branch Water, Light, Power and Heat Company obtains its supply from nine eight-inch flowing wells, averaging twenty-two feet in depth, and a flowing dug well, cemented on the sides and top, twenty-one feet in depth and six feet in diameter. It is estimated that one-third of the supply is obtained from the large well.

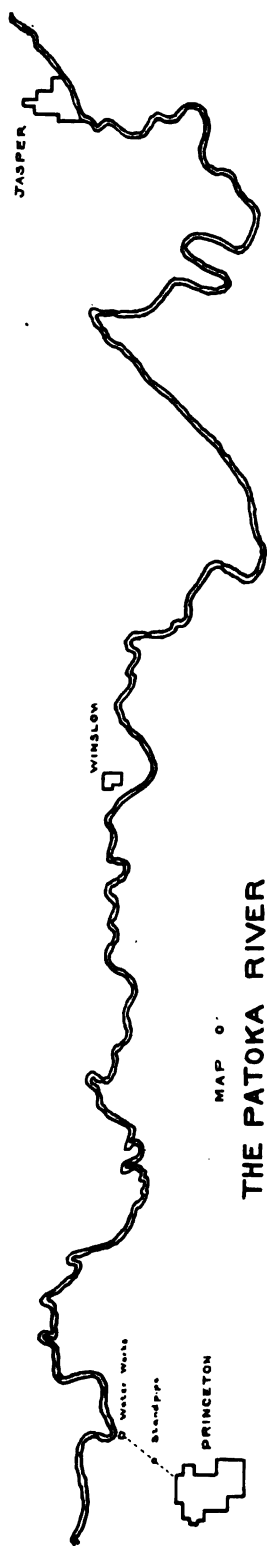
These wells are located on one acre of ground, one-half mile from the pumping station which is at the edge of the corporation. The location of the wells and the pumping station with reference to the town is shown on the accompanying map. A twenty-foot clay stratum overlies the water-bearing sand, which varies from two to three feet in thickness. The water is piped from the nine wells through tile with cemented joint to the large concrete well, from which point it flows by gravity to a suction well at the pumping station through an eight-inch tile. The suction well is eighteen feet deep, twenty-four feet in diameter, and has a capacity of 60,000 gallons.

An electric driven triplex National pump of 500,000 gallon capacity forces the water to two pressure tanks, nine feet in diameter, thirty-eight feet in length with a capacity of 4,000 cubic inches per minute against 100 pounds furnishes the pressure. The electric driven pump is automatically controlled by the pressure in the tanks, which varies between twelve and sixty-five pounds.

The population of the town is 1,350 and it is estimated that 500 people are being supplied. There are ninety-six taps and twenty-eight fire hydrants. The town is adequately covered by the four and one-half miles of mains in use.

The supply was sufficient at all times during the extremely dry weather of the past summer, and an analyses of it at the laboratories of the State Board of Health, laboratory number 7266, showed it to be of good quality. An unlimited supply for any increasing consumption can be obtained from additional wells in the neighborhood of the present ones.

All sanitary precautions have been taken in the selection and care of the supply at the site of the wells and with one improvement



MAP 0.  
**THE PATOKA RIVER**  
Showing the location of Princeton and Jasper.  
Scale 3 inches = 1 Mile

at the pumping station, i. e., a change in the overflow of the suction well, the supply will be amply protected from all possibilities of pollution. At the present time the overflow line is a four-inch tile with no trap or device other than a wire net to prevent small animals or insects from getting into the well. To remedy this a small well is to be installed near the suction well, into which the overflow line will run. The mouth of the overflow will be protected by a check valve. The outlet of the small well is to be at least six inches lower than the inlet, allowing the well to act as a catch basin, which can be easily cleaned, and which will act as a supplementary precaution should the check valve fail to work at any time.

## AN INVESTIGATION OF THE WATER SUPPLY OF PRINCETON, INDIANA.

J. A. CRAVEN.

The following request for an examination of the water supply of Princeton under the Thornton act, "An act concerning the purity of water supplied to any city or town for domestic use," was received by the State Board of Health:

JULY 26, 1913.

State Board of Health, Indianapolis, Ind.:

Gentlemen—The undersigned County Health Officer of Gibson County, State of Indiana, avers the following facts, to wit: That he believes the health of the people of the city of Princeton, Gibson County, Indiana, is injuriously affected and endangered by the public water supplied in said city for domestic use, being taken directly from Patoka River without being filtered, when the town of Jasper, Indiana, a town of thirty-five hundred inhabitants, having a sanitary sewer system, is emptying all its sewage into said Patoka River about fifty miles above the intake pipe of the Princeton Water Company's plant which supplies said city of Princeton with water. That the undersigned believes the public water supply of said city of Princeton is impure and dangerous to health.

Wherefore the undersigned prays the State Board of Health of Indiana, forthwith to inquire into and investigate the charge made in this complaint and take such action as is necessary to secure pure and wholesome water for the citizens of said city of Princeton.

A. L. ZILLIAK,  
Health Officer of Gibson County, Ind.

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INDIANAPOLIS, July 28, 1913.

Dr. A. L. Zilliak, County Health Commissioner, Princeton, Ind.:

Dear Doctor—We are in receipt of your petition requesting the State Board of Health to inquire into and investigate the water supply of the city

of Princeton, and to take such action as may be necessary to secure pure and wholesome water for the citizens of said city. You are advised that this petition is in due and proper form, and has been placed on file. It becomes the duty of the State Board of Health, under the law, to cause an investigation to be made of the water supply of Princeton, and to order of the water company whatever may be necessary to insure a water supply of standard wholesomeness to the city of Princeton.

I beg to advise, however, that there are several petitions on file ahead of yours. For this reason it will be some time before the State Board of Health can make a formal investigation at Princeton, Warsaw, Crawfordsville, New Albany, Summitville, have already filed petitions, and the water laboratory of the State Board of Health is now taking up the investigation in these cities in the order in which petitions were received. The Princeton water supply will be investigated in its proper turn, but as said before, it will be at least two months before this investigation can be made. In the meantime, permit me to suggest that you write the city council of Princeton to establish a small hypochlorite plant in order that the water may be treated, and in this way rendered as free from contamination as possible.

Very truly yours,

(Signed) W. F. KING,  
Assistant Secretary.

In response to the above request, the State Board of Health has caused the supply to be investigated and samples of the water analyzed October 22d to 30th.

The water supply is obtained from the Patoka River. The Princeton Water and Lighting Company, a private corporation, installed the system in 1893. The pumping station is located on the river, north of Princeton, distant in a direct line from the corporation two miles, and by the public highway three miles.

Three pumps are now installed at the station and the fourth is ordered, the foundation for which is already constructed. Two of the pumps, a Laidlaw-Dunn-Gordon horizontal duplex pump with a capacity of 1,250,000 gallons, and a Barr vertical compound fly-wheel pump, with a capacity of 3,000,000 gallons, have been in operation twenty and ten years respectively. The former has a twelve-inch and the latter a twenty-four-inch intake into the river.

A Laidlaw-Dunn-Gordon horizontal cross-compound condensing pump, of 1,700,000 gallons capacity under domestic conditions at 47 revolutions per minute, and 3,500,000 gallons under fire conditions at 68 revolutions per minute, ordered in May, 1913, is now set upon its foundation, but has not been operated. It has a sixteen-inch intake to the river.

A Worthington belt-driven low pressure pump, operated by an American Blower Company automatic engine, has been ordered.

The foundation is prepared, but the pump has not been delivered to date. This pump has a capacity of 2,600,000 gallons and is to be used in supplying the new sedimentation basins, upon which construction has been started. A twelve-inch intake leads from this pump to the river. All the pumps have intakes in the river and can be used for low service to supply the new sedimentation basins, and three of them can be used for high pressure service.

A twelve-inch main leads to the standpipe, and a twelve-inch line from there to the city, the corporation line of which is about one-half mile from the standpipe. The standpipe is seventy-five feet in height, twenty feet in diameter and has a capacity of 175,000 gallons. It is located on a hill about forty feet above the level of the city. The direct-indirect system is in use, and eighteen miles of mains supply 874 taps, or about two-thirds of the population, which is estimated at 6,528. The average daily consumption is 800,000 gallons.

The domestic pressure is from 40 to 60 pounds, the standpipe when full giving the latter pressure. For fire purposes the standpipe can be cut off by an electric valve and a direct pressure of 80 to 90 pounds could be supplied by the pumps. This has not been done lately, however, as the pipe line to the city will not stand the strain. Several disastrous fires have occurred during the last few years, attributed mainly to the lack of pressure. The system is given a rating of "very poor" by the fire insurance companies. There are 149 fire hydrants in service.

Work on two sedimentation basins, each with a 750,000 gallon capacity, has been started. They are to be located near the pumping station in a natural ravine.

To increase the fire pressure an eight-inch Janesville single stage, centrifugal, booster pump of 2,000,000 gallon capacity was ordered in May, 1913, and is installed at the standpipe. It is driven by a 100 H. P. General Electric motor connected to an automatic starter with a push button control.

To determine the quality of the water, bacteria counts on agar and gelatin, and the test for *B. coli* in lactose broth and lactose peptone bile were made. Thirty-six samples from taps and five from the river at the water works intake were analyzed. The bacteria counts on agar varied between 30 and 5,200, and on gelatin between 60 and 14,000. All 1.0 cubic centimeter samples, 35 in all, planted in lactose broth, were positive, and of nine .1 cubic centimeter samples in lactose broth, four were positive. Twelve 1.0 cubic centimeter samples were planted in lactose bile and all were

positive. Of five .1 cubic centimeter samples in lactose, four were positive and one negative.

The counts on five river samples taken at the water works intake varied from 400 to 4,300 on agar, and from 530 to 15,700 on gelatin. Five 1.0 cubic centimeter samples in lactose broth showed positive coli and the four 1.0 cubic centimeter samples planted in lactose bile were positive.

The results of the analyses of the river and tap samples are given in Table A. They indicate that the water supplied is not a safe one. While the presence of positive gas in a small per cent. of all 1.0 cubic centimeter samples examined is allowable, every tap sample analyzed in this investigation was positive in 1.0 cc. samples, and four of the five .1 cc. samples were positive. The presence of *B. coli* as just stated, together with the high bacteria counts on both agar and gelatin, show that the water is not safe for drinking and domestic purposes.

During the period of the investigation the turbidity of the river water varied between 60 to 350, and the tap water between 10 and 370. From a physical standpoint the presence of silt and mud does not make the water unsafe to use, yet its presence is not desirable. When the turbidity of the tap water was greatest the bacterial content was the highest.

The only town of size on the Patoka River is Jasper, with a population of 2,490. It is forty-six miles from Princeton by rail, and between seventy-five and one hundred miles by river. A new sanitary sewer system was installed and put into operation about a year ago. While the system was designed to care for the greater part of the town, there are only about 400 using it. Three miles of sewers are in use with one outlet into the Patoka River. As some complaint was made at Princeton in regard to the discharge of this sewage, an investigation of the sewer was made, and samples collected above and below the outlet. The results of the analyses are given in Table B. They show the bacteria count on agar of samples taken above the outlet of the Jasper sewer to be but little different from those at the water works intake at Princeton, the former being 2,600 and the average of five samples at the latter place being 2,366. One gelatin count at Winslow about midway between the two places was 700 while the average count at the water works intake was 5,566. The location of these towns is indicated on the accompanying map.

The Patoka River is a sluggish stream, and the sedimentation afforded, together with the natural dying out of the bacteria, suffi-

ciently reduces the contamination so that the sewage entering at Jasper can not be considered as constituting a menace to the water supply at Princeton.

The drainage from any populated and unprotected watershed into a body of water from which a public supply is drawn, even though no sanitary sewer discharges into it, is sufficient justification for requiring some treatment of the water supply. As shown in the analyses, the water is contaminated and unsafe for use. Prescott and Winslow's 1913 edition of the *Elements of Water Bacteriology*, says: "Where bacterially impure effluents are discharged into streams used for sources of water supply, the town taking water may protect itself by filtration. It should so protect itself at any rate from the pollution necessarily incident to surface waters; and unless the bacterial condition is made very materially worse by the discharge of sewage effluents, it is fair that the responsibility of purification should rest on the water works, rather than on the sewage purification plant." The treatment necessary for this supply is filtration followed by a hypochlorite or other germicidal treatment at periods when an examination of the supply shows this to be necessary.

The water company has already begun the construction of a sedimentation basin, the plans for which include a foundation for a 1½ million gallon filtration plant. The advisability of installing the filter plant at the same time as the sedimentation basin is readily seen.

It is recommended that the Princeton Water and Lighting Company install a filtration plant, the same to be in operation by January 1, 1915.

It is recommended that reports of definite progress be made to the State Board of Health April 1 and August 1, 1914.



TABLE A.  
ANALYSES OF SAMPLES FROM THE CITY WATER SUPPLY, PRINCETON, INDIANA, OCTOBER, 1913.

DATE.	Laboratory Number.	Turbidity.	Bacteria Per CC.		Presumptive Coli.				Remarks.
			Agar.	Gelatin.	Lac. Broth.		Lac. Bile.		
					1 cc.	.1 cc.	1 cc.	.1 cc.	
Oct. 22.	1	60	400	530	+	.....	+	.....	River, water works intake.
Oct. 22.	2	.....	Spr.	1,120	+	.....	+	.....	Tap, water works.
Oct. 22.	3	.....	Spr.	2,320	+	.....	+	.....	Tap, 801 North Main.
Oct. 22.	4	60	840	320	+	.....	+	.....	Tap, Dr. Ziliak's office.
Oct. 22.	5	.....	Spr.	260	+	.....	+	.....	Tap, Dr. Rhodes' office.
Oct. 22.	7	350	4,300	15,700	+	.....	+	.....	River, water works intake.
Oct. 23.	8	.....	4,080	14,000	+	.....	+	.....	Tap, water works.
Oct. 23.	9	.....	4,000	12,500	+	.....	+	.....	Tap, 233 South Gibson.
Oct. 23.	10	.....	5,200	9,500	+	.....	+	.....	Tap, Mrs. Reeves' residence.
Oct. 23.	11	.....	2,160	4,500	+	.....	+	.....	Tap, Dr. Hudson's office.
Oct. 23.	12	370	3,600	13,200	+	.....	+	.....	Tap, Dr. Ziliak's office.
Oct. 23.	13	.....	Spr.	5,600	+	.....	+	.....	Tap, Dr. Hudson's residence.
Oct. 24.	14	85	7,800	7,300	+	.....	+	.....	River, water works intake.
Oct. 24.	15	.....	Spr.	5,300	+	.....	+	.....	Tap, water works.
Oct. 24.	16	.....	2,000	3,700	+	.....	+	.....	Tap, 902 North Main.
Oct. 24.	17	.....	800	3,200	+	.....	+	.....	Tap, 505 North Main.
Oct. 24.	18	.....	850	4,200	+	.....	+	.....	Tap, 504 South Main.
Oct. 24.	19	.....	1,500	3,100	+	.....	+	.....	Tap, Dr. Hudson's office.
Oct. 24.	20	140	2,230	8,400	+	.....	+	.....	Tap, Dr. Ziliak's office.
Oct. 24.	22	.....	Spr.	1,700	+	.....	+	.....	Tap, Dr. Hudson's office.
Oct. 23.	23	.....	Spr.	870	.....	.....	.....	.....	Tap, Dr. Hudson's residence.
Oct. 23.	24	.....	Spr.	2,800	.....	.....	.....	.....	Tap, 309 East Broadway.
Oct. 25.	27	75	Spr.	2,900	.....	.....	.....	.....	River, water works intake.
Oct. 25.	28	.....	Spr.	980	.....	.....	.....	.....	Tap, water works.
Oct. 25.	29	65	Spr.	650	.....	.....	+	.....	Tap, 902 North Main.
Oct. 25.	30	.....	Spr.	340	.....	.....	+	.....	Tap, Dr. Ziliak's office.
Oct. 26.	31	85	240	800	.....	.....	+	.....	Tap, Dr. Hudson's office.
Oct. 26.	32	75	800	1,760	.....	.....	+	.....	Tap, Dr. Ziliak's office.
Oct. 27.	39	135	2,400	1,240	.....	.....	+	.....	Tap, Dr. Ziliak's office.
Oct. 28.	41	.....	1,800	3,000	.....	.....	.....	.....	River, water works intake.
Oct. 28.	42	.....	1,100	3,000	.....	.....	.....	.....	Tap, water works.
Oct. 28.	43	95	1,250	1,200	.....	.....	.....	.....	Tap, 902 North Main.
Oct. 28.	45	.....	1,100	1,160	.....	.....	+	.....	Tap, Dr. Ziliak's office.
Oct. 29.	51	10	450	330	.....	.....	+	.....	Tap, Dr. Hudson's office.
Oct. 29.	52	.....	Spr.	90	.....	.....	+	.....	Tap, Dr. Ziliak's office.
Oct. 30.	54	.....	Spr.	120	.....	.....	.....	.....	Tap, 406 South Hart.
Oct. 30.	55	.....	Spr.	75	.....	.....	.....	.....	Tap, northwest corner Prince and Clark.
Oct. 30.	56	.....	Spr.	160	.....	.....	.....	.....	Tap, northwest corner Gibson and Broadway.
Oct. 30.	58	.....	Spr.	80	.....	.....	.....	.....	Tap, 208 East State.
Oct. 30.	59	.....	Spr.	35	.....	.....	.....	.....	Tap, Dr. Hudson's office.
Oct. 30.	60	15	.....	60	.....	.....	.....	.....	Tap, Dr. Ziliak's office.

TABLE B.

Analyses of Patoka River Samples Collected Between Jasper and Princeton, Indiana, October, 1913.

DATE.	Laboratory No.	Bacteria Per CC.		Presumptive B. Coli.	Remarks.
		Agar.	Gelatin.		
Oct. 27.	34	2,800	.....	Positive.....	400 feet above Jasper sewer outlet.
Oct. 27.	35	Spr.	.....	Positive.....	15 feet above Jasper sewer outlet.
Oct. 27.	36	9,200	.....	Positive.....	25 feet below Jasper sewer outlet.
Oct. 27.	37	21,000	.....	Positive.....	500 feet below Jasper sewer outlet.
Oct. 27.	38	15,800	.....	Positive.....	1,000 feet below Jasper sewer outlet.
Oct. 27.	40	Spr.	700	Positive.....	At Winslow.

Average bacterial count on samples collected at the water works intake was 2,386 per cc. on agar and on gelatin was 5,866 per cc.

## INVESTIGATION OF SEWAGE DISPOSAL AT THE SOUTHERN INDIANA HOSPITAL FOR INSANE.

J. A. CRAVEN.

At the request of Mr. Amos Butler, Secretary of the Board of State Charities, the State Board of Health, on October 29, 1913, caused an investigation of the sewage disposal at the Southern Indiana Hospital for the Insane.

The disposal of the sewage at the hospital has been an object of contention ever since its installation. When the institution was completed in 1890 practically nothing was done toward disposing of the sewage. A system of intermittent filtration was attempted, but found unsatisfactory. The next plan considered was to discharge it into Pigeon Creek by means of a sewer, about two miles in length, but after the right of way had been secured this plan had to be abandoned because of the lack of funds for the purpose. In the meantime serious opposition had arisen among the land-owners when the plan became generally known and the old but ineffective method was again put into use. This was finally abandoned and the sewage allowed to run into an open ditch, which emptied into a large county ditch. Serious and well founded objections were raised against this nuisance and, as no relief was imminent, an injunction was asked for and granted by the Superior Court of Vanderburgh County.

As the situation was serious, the services of Capt. A. B. Fitch, a civil engineer, were secured and a report (the complete report and history of the disposal of the sewage, including the three plans of Captain Fitch, is given in the special report to the Governor and General Assembly in 1895) submitted by him contained three plans, one to convey the sewage to the Ohio River, a second to connect with

the Chestnut street sewer in Evansville, and the third to build a sewer to Pigeon Creek. The Ohio River outfall was too expensive, and as the sewage would be emptied above the water works intake, serious objections would be raised to this. The objections raised by the people and press of Evansville, after the privilege for the connection to the city sewer had practically been granted by the proper officials, were so unreasonable that this plan had to be given up.

The most feasible of the three plans seemed to be the 8-inch pipe sewer to Pigeon Creek, the length of which was less than two miles and the cost \$6,200, without the connection at the hospital. This could not be legally done, as an act passed by the General Assembly in 1893 prohibited the discharge of sewage into any creek or river within ten miles of the corporate limits of any city having a population of more than 50,000 inhabitants. As the proposed outlet into Pigeon Creek was less than seven miles from the city limits of Evansville, this plan had to be abandoned.

Not until 1898 was a definite step taken toward improving the situation. At that time a chemical precipitation plant was built. A frame house was built to house the storage bin, mixing tanks, sludge pump, sluge press and the electric motor which supplied the motive power. The dosing of the sewage with the chemicals was regulated by hand and at times there was an overdose while at others insufficient amounts were added. From the dosing chamber the sewage was conveyed to two settling basins and the clear liquid from them was passed on to four small sand filters. In 1906 the plant was rebuilt and changed to the bacterial type. The sewage now passes through a septic tank, to a sedimentation basin, then to a contact bed of broken stone and then, intermittently, to six slow sand filters. The plant has been giving good service since 1907. The accompanying analyses, Table A, and those made in June, 1908, and given on page 411 of the 1911 report of the State Board of Health, indicate that the treatment is efficient.

Complaints have been received from time to time from Mrs. Mary M. Stockwell and family, who have a farm of 570 acres adjoining the State grounds. The ditch passed in front of her house, about 200 feet distant, but does not touch her property. A colored caretaker on her farm, when interviewed said that "it never bothered him at all." Mrs. Stockwell spends but a part of the year on the place, while the caretaker has been there during the entire year, for three years.

J. W. Granger has lived on the farm adjoining the hospital grounds and the ditch passes through a corner of his place. He has not been bothered much. He said, "There was some odor this past summer, on account of the weeds blocking the ditch. If properly cared for, there would be no trouble." In talking further with him he said he believed that imagination had a lot to do with it, and also that if it had not been for the irrigation afforded by the ditch he would not have raised any corn this year.

The ditch has but a slight fall, and frequently becomes clogged, and at such times is liable to become offensive. The people living along the ditch give it but little attention, and the care given it by the hospital officials inside the state grounds would not remedy the conditions below.

The proposal made by Captain Fitch to connect with the city sewers of Evansville, if reasonable terms could be obtained, or to sewer to Pigeon Creek if the restrictions formerly imposed are removed, would do away with all causes for complaint. The connection with the city sewer would remove the need for treatment, at least until the time that treatment of all sewage discharged into the Ohio River was required.

The discharge of the effluent from the disposal plant into Pigeon Creek would not be objectionable, offensive or dangerous to those living below on the creek. It was determined in the investigation by Captain Fitch that discharge of the raw sewage would not be a nuisance. He said, "It can not, therefore, be offensive to sight or smell, or in any way detrimental to health."

It is believed that any steps that could be taken to dispose of the treating plant effluent other than discharging it into the county ditch are advisable, as all future cause for complaints would thereby be removed.

TABLE A.

	Oxygen Con- sumed.	Oxygen Dis- solved.	Solids.		BACTERIAL					
			Total.	Fixed.	Presumptive Coli.		Bacteria Per CC.		Agar.	
					Lactose Bile.	Lactose Broth.	Gelatine.			
Raw Sewage.....	.6745	.074	57.6	43.0	Present.	Present.	960,000		381,000	
Treated sewage.....	.4560	.333	55.2	45.2	Present.	Present.	59,000		180,000	
Creek.....	1.1210	.251	33.0	32.0	Present.	Present.	183,000		77,000	

INVESTIGATION OF THE DITCH AT OAKLAND CITY,  
INDIANA.

J. A. CRAVEN.

In response to the petition submitted by A. Cole, attorney for C. L. Powers and O. L. Smith, the State Board of Health, on October 31, 1913, caused an investigation of the drainage ditch passing through the town of Oakland City.

The ditch in question drains a considerable portion of the town and flows within three blocks of the central business portion. The greater part of the drainage from cesspools and vaults empties into it before it reaches this district. There are fifty-one connections to the ditch, which, in the portion of the town most seriously affected, has but little fall and during the dry summer months it becomes choked, allowing offensive pools to form.

The ditch is also used to some extent for the disposal of garbage. On the date of this investigation a pile of garbage was found in the ditch at the intersection of the alley and Mulberry street, between Union and Washington, and the fur and entrails of a rabbit had been thrown into it from the house on the corner of Grove and Mulberry. These two instances indicate that proper attention is not given the maintenance of sanitary conditions or this would not be allowed. It is generally agreed that the ditch is a nuisance, but the majority of those benefiting by the connection are not affected by the offensive condition, as they live on the hill and away from it far enough to escape the odors.

The remedy for the situation is to sewer the ditch beyond the point where the present conditions are offensive, and it should be handled locally through the corporation by the board of health, the town council and the parties affected. The length of the ditch to which attention needs to be given is about 600 feet, the distance from railroad to railroad. About a year ago an estimate of \$555.00 was obtained for the cost of constructing this sewer, 2½ foot tile to be used.

Dr. W. H. Smith, Secretary to the Board of Health, claims he was entirely ignored by the present petitioners, and until they are willing to co-operate with him he will do nothing further. On the other hand the petitioners say they made an appeal to him and no permanent relief was afforded.

O. L. Smith and C. J. Powers are the most seriously affected, each of them having recently built houses along the ditch at its worst point, knowing at the time the existing conditions. The build-

ing of the ditch would increase the value of their property, but this is not to be considered in the investigation.

It is not believed that co-operation and relief can be accomplished through local officials, and if this can not be done some action is advisable. If the State Board of Health declares the present situation a nuisance, the petitioners claim that little difficulty will be experienced in raising the money needed for the improvements, as those benefiting would pay toward the improvement, rather than abandon the outlets. Toward this fund each of them assert they will give \$25.00, the balance to be apportioned upon those benefited and the town itself. The town is not financially able to incur the entire expense.

### INSTALLATION OF HYPOCHLORITE TREATING PLANT AT WARSAW, INDIANA.

J. C. DIGGS.

At the request of Theo. C. Frazer, manager of the Winona Electric Light and Water Company of Warsaw, Indiana, that the hypochlorite plant installed for the treatment of the public supply be visited by a representative from the Indiana State Board of Health, I report as follows:

An inspection of the water supply of the city of Warsaw was made in June, 1913, which resulted in the following order from the State Board of Health:

INDIANAPOLIS, July 29, 1913.

The Winona Electric Light and Water Co., Warsaw, Ind:

Gentlemen—The Indiana State Board of Health in regular session, July 16, 1913, under the statutes provided, after consideration of all the facts and evidence it had gathered, adopted the following order, to wit:

*Ordered:* The Winona Electric Light and Water Company of Warsaw, Kosciusko County, Indiana, shall at the earliest practical moment install a hypochlorite of lime plant to destroy the contamination which the water contains, and the said company shall by June 1, 1914, have installed an efficient and sufficient filter plant for the filtration of its supply if taken from Center Lake, or this method not being chosen by the said water company, then said water company shall secure a new supply from wells placed conveniently upon the shores of Winona Lake.

Attest: J. N. HURTY, Secretary.

On October 30th I visited the Warsaw water works plant and found it practically ready for operation. The treating plant is located in the south part of the old water works building, space

having been made available by the removal of old pressure filters which have been out of use for some years. The treatment system is comprised of a 50-gallon concrete mixing tank, two 425-gallon solution tanks and a feeding device. The mixing tank is cylindrical with plumbings for drawing off the clear solution and for draining and washing out the tank. The solution tanks can also be completely drained into the sewer. Each tank is equipped with a stirring paddle for mixing, operated from an overhead shaft, driven by a water motor. The feeding device consists of a box with float control valve and a diaphragm pump which delivers a definite amount with each stroke and is automatically regulated by the stroke of the pump on the mains. The chemical solution used is of  $\frac{1}{2}$  per cent. strength, and is fed at the rate of 10 pounds of chloride of lime per million gallons. This treatment should give a fair bacterial reduction and make the water supply a safe one for domestic and drinking purposes.

The plant was first put in operation on October 31, 1913, three months after the order for installing the plant had been issued by the State Board of Health. Samples of water for bacterial examination were taken on November 1st, after the plant had been in operation for eight hours. These samples were examined in the State Laboratory of Hygiene, with the following results:

SOURCE OF SAMPLE.	Bacteria, Per CC.	Litmus Lactose Agar.	Lactose Broth.	Per Cent. Reduction of Bacteria.
Center Lake, raw water intake.....	24.			
Tap at pump house.....	9.5			60
Tap at Widaman's residence.....	6.5			73
Tap at office of Warsaw water works.....	18.5			33

Considering the low bacterial content of the raw lake water the reduction resulting from the treatment is good. The higher counts on the sample planted from the tap at the office of the water works company very probably result from the failure of the treated water to reach that point before the sample was taken. Owing to the very short length of time the treatment has been carried on this might very easily result. It is highly advisable that at some later date, when the plant has been in operation for some time, and after the mains have been thoroughly flushed out, other tests shall be made. Should these tests not show the proper removal of the bacteria, an increased dosage of the hypochlorite of lime should be resorted to. Since the water at the present time



is not used for drinking purposes this can be effected with no additional dissatisfaction to the consumers.

The water company is at the present time considering drilling deep wells near Winona Lake from which they hope to obtain a sufficient supply for the city of Warsaw and for Winona Park at Winona. This seems a highly advisable plan and should furnish an abundant supply of drinking water to both these communities.

INDIANAPOLIS, November 15, 1913.

Dr. W. L. Hines, Health Commissioner, Kosciusko County:

My Dear Sir—Recently the Winona Electric Light and Water Company installed a hypochlorite plant for treating the water supply of the city of Warsaw. During a visit at that time I was able to carry on tests on some of the waters of Winona Park, with the following results:

SOURCE OF SAMPLE.	Lactose Broth.	Bacteria Per CC.
Pump at old power house.....	No gas.....	5
Spring at entrance building.....	No gas.....	5
Well of water works company, on hill.....	No gas.....	1
Studebaker spring.....	No gas.....	25
McIntyre spring.....	No gas.....	12

These results show that the supply now furnished by the water company is in very good condition. At the time of my visit the company was pumping from the deep well on the hill only. The supply from the pump at the old power house is in first-class condition. However, as the reservoir into which this water flows is covered by loose boards, and as the wall of the reservoir is only slightly elevated above the surrounding ground, water from this source is liable to contamination from surface drainage at any time of hard rain.

I did not take samples from the other sources of supply of the water company's system, i. e., from the reservoirs located near the lake and fed by the drainage from the springs located above. However, on account of the liability of their being polluted by their close proximity to the sanitary sewers, and by the surface drainage, I would condemn this method of producing a water supply.

The springs examined were found in good condition. If, however, as was reported, the water feeding the springs flows through ground through which the sanitary sewers run, it is liable at any time to become contaminated. This condition would most likely happen when the volume of sewage was at the maximum, and may have been the source of the typhoid fever which occurred during the early fall.

The sewage system of Winona Park is in a very bad condition as far as sanitation is concerned, and is a serious menace to the health of the community. The close proximity of the septic tanks to the buildings and

the failure of this system at times of maximum flow to properly take care of this sewage, make it essential that a new system be installed.

Very truly yours,

J. C. Digos,  
Assistant Water Chemist.

## SECOND INVESTIGATION OF THE CONDITION OF THE MUSCATATUCK RIVER AT VERNON, INDIANA.

INDIANAPOLIS, December 30, 1913.

Dr. H. E. Barnard, Indianapolis, Ind.:

Dear Sir—Acting under instructions, I made a trip to Vernon, Indiana, where I conducted a sanitary survey of the Muscatatuck River, between Vernon and North Vernon. A laboratory was installed at Vernon, Indiana, and investigations carried on during the first week of December, 1913. I report as follows:

In October, 1911, an investigation of the condition of the Muscatatuck River between North Vernon and Vernon, Indiana, was made by Jay A. Craven, Water Chemist for the State Board of Health. (See 1912 Report.) The town of Vernon takes its water supply from this river at a point two miles below the outflow of the North Vernon sanitary sewer, which discharges about 300,000 gallons of domestic sewage per day. This condition, according to the complaints of various citizens of the town of Vernon, very seriously pollutes the stream, and makes it a menace to the health of the community.

The two months previous to the investigation of Mr. Craven were attended with an unusually high precipitation, resulting in the removal of all offensive matters from the bed of the stream, and at the same time furnishing a satisfactory means for the disposal of the sewage by dilution. Samples taken at that time showed "the water at the Vernon pumping station to be practically of the same composition as that at the North Vernon station, both of them from a chemical standpoint being of good quality for drinking purposes."

During the months of June and July, 1913, the river again became very low, and the offensive condition which had prevailed two years before, again became apparent. At this time a series of five samples were collected and sent to the Water Laboratory of the State Board of Health by Dr. D. N. Hayden, Mayor, and D. W. James, Secretary of the Board of Health. The following is the result of the analysis of these samples.

## SAMPLES FROM MUSCATATUCK RIVER TAKEN JULY, 1913.

CONTENTS.	Number 2. North Vernon Sewer at Mouth	Number 3. 250 Feet Below Sewer.	Number 4. One-half Mile Below Sewer.	Number 5. Vernon Intake.	Number 6. Vernon Tap.
Ammonia, free.....	.5260	.4100	.3400	.0020	.0040
Ammonia, alb.....	.4730	.3260	.2170	.0060	.0080
Chlorine.....	11.4	9.2	4.0	1.0	1.000
Nitrates.....	.0000	.0000	.0000	.0000	.0000
Nitrites.....	.0024	.0020	.0014	Trace	Trace.
Iron.....	.04	.02	.00	Trace	Trace.
Hardness.....	22.8	21.2	16.0	15.2	15.4
Odor.....	Decided	Decided	Decided	Slight	Slight.
Turbidity.....	Sewage, decided	Sewage, decided	Sewage, decided	Earthy, none	Earthy, none.
Sediment.....	Decided, veg.	Decided, black	Decided, black	Slight, brown	Slight, brown.
Color.....	8	8	4	4	4
B. Coli.....	Present.	Present.	Present.	Gas.	Gas.

The figures indicate that the water of the stream is grossly polluted for a distance of one-half mile below the outflow of the sewer. However, at the point of the intake of the Vernon supply, the water had come back to normal condition and would not be called a seriously contaminated water.

This sudden change from a grossly polluted water to one of fair purity can be accounted for only by studying the local conditions. Two factors make such an apparent purification possible. The river flows practically its entire course over limestone. At frequent intervals, pools, quite large and deep, occur, and by their aid nature effects an almost perfect sedimentation. During this action practically all organic matter is removed from the water. In the second place the river is fed to a great extent by springs whose source is entirely independent of the North Vernon sewer. These springs in the extremely dry weather furnish practically the entire supply of the Muscatatuck River at Vernon, Ind.

In the fall of 1913 the Board of Health of Vernon asked for a further investigation of the condition of this stream, and that a more extended sanitary survey of the water supply be made. Acting under orders, the writer proceeded to Vernon on December 1, 1913, prepared to make bacterial examinations, and, to a limited extent, chemical analysis of samples of river water taken at various points of the water course.

Total bacterial counts were made as well as the effect of bacteria or lactose both determined. The chemical factors determined was oxygen consumed, nitrites, and chlorine. Samples were collected each day from six sources and examined in the laboratory set up in the town hall of Vernon. The sampling points were the river at the North Vernon intake, sewer at outflow, river 100 yards

below sewer, river one-half mile below sewer, river at Vernon intake and Vernon tap.

The North Vernon intake is located about one-half mile north of the city. The height of the dam across the river has been recently raised four feet, thereby doubling the supply of stored water. The sewer outflow is from the mouth of a cavern through which the sewage flows the last half mile of its course before it reaches the river. The outflow from this cavern was approximately one-half million gallons per day. A sample was taken from the river 100 yards below the sewer, and another about one-half mile farther down stream at a pool known as Babbs' Hole. The fifth sample was taken from the river at the Vernon intake, and the sixth from a Vernon tap. The result of the examination of three sets of samples were as follows:

EXAMINATION OF SAMPLES FROM MUSCATATUCK RIVER, JENNINGS COUNTY.

Date.	Sample Number.	Sampling Point.	Oxygen Consumed.	Chlorine.	Nitrites.	Odor.	Turbidity.	Sediment.	Average Bacteria Per CC.	Lactose Broth.
12-2-13	1	North Vernon intake.....	3000	9	.0000	None.....	Slight.....	Decided.....	167	B. coli pr.
	2	North Vernon sewer at mouth.....	4120	3.1	.0020	Sewage.....	None.....	Slight.....	23,500	B. coli pr.
	3	River, 100 yards below sewer.....	4000	1.0	.0004	Veg.....	Slight.....	Slight.....	23,500	B. coli pr.
	4	River, ½ mile below sewer.....	2850	1.0	.0002	Veg.....	Slight.....	Slight.....	2,283	B. coli pr.
	5	Vernon intake.....	2850	.95	.0002	Veg.....	Slight.....	Slight.....	1,400	B. coli pr.
12-3-13	6	Vernon tap.....	2460	1.00	.0000	None.....	Very slight.....	Very slight.....	1,050	B. coli pr.
	7	North Vernon intake.....	3020	.6	.0000	Veg.....	Slight.....	Decided.....	950	B. coli pr.
	8	North Vernon sewer at mouth.....	5410	3.3	.0030	Sewage.....	Slight.....	Slight.....	29,000	B. coli pr.
	9	River, 100 yards below sewer.....	2370	9	.0002	Veg.....	Slight.....	Slight.....	1,928	B. coli pr.
	10	River, ½ mile below sewer.....	2370	.8	.0002	Veg.....	Slight.....	Slight.....	1,875	B. coli pr.
12-4-13	11	Vernon intake.....	2640	7	.0002	Veg.....	Slight.....	Slight.....	2,900	B. coli pr.
	12	Vernon tap.....	2260	.8	.0000	None.....	Very slight.....	Very slight.....	1,800	B. coli pr.
	13	North Vernon intake.....	3350	7	.0000	Veg.....	Slight.....	Slight.....	558	B. coli pr.
	14	North Vernon sewer at mouth.....	4318	3.3	.0028	Sewage.....	Slight.....	Slight.....	26,000	B. coli pr.
	15	River, 100 yards below sewer.....	2763	.9	.0006	Veg.....	Slight.....	Slight.....	2,675	B. coli pr.
(Miles from North Vernon Intake.)	16	River, ½ mile below sewer.....	2600	.9	.0001	Veg.....	Slight.....	Slight.....	3,000	B. coli pr.
	17	Vernon intake.....	2695	.9	.0002	Veg.....	Slight.....	Slight.....	1,825	B. coli pr.
	18	Vernon tap.....	2660	.8	.0000	None.....	Very slight.....	Very slight.....	1,175	B. coli pr.
	2.00	North Vernon intake.....	3190	.77	.0000	.....	.....	.....	560	B. coli pr.
	2.17	North Vernon sewer.....	4616	3.23	.0026	.....	.....	.....	25,830	B. coli pr.
2.5	2.5	River, 100 yards below sewer.....	3111	.93	.0006	.....	.....	.....	2,310	B. coli pr.
4.0	4.0	River, ½ mile below sewer.....	2605	.90	.0002	.....	.....	.....	2,380	B. coli pr.
	4.0	North Vernon intake.....	2731	.88	.0002	.....	.....	.....	2,040	B. coli pr.
		Vernon tap.....	2460	.87	.0000	.....	.....	.....	1,340	B. coli pr.

Two one gallon samples were taken, one from the river at the North Vernon intake and one at the Vernon intake and sent to the Water Laboratory of the State Board of Health at Indianapolis for complete sanitary analysis. The following is the result:

**CHEMICAL ANALYSIS OF WATER FROM MUSCATATUCK RIVER.**

Parts per 100,000.	North Vernon Intake.	Vernon Intake.
Ammonia free	.0060	.0030
Ammonia, albuminoid	.0100	.0060
Chlorine	.8	1.00
Nitrates	.03	.005
Nitrites	.0001	.0001
Hardness	15.6	15.2
Odor	Woody	None
Turbidity	Decided	Slight
Sediment	Slight	Slight
Color	16	12
B. Coll	Present	Gas

Comments from various citizens of the town of Vernon showed that the condition of the river during the dry months of 1913 were practically the same as shown by the evidence obtained by Mr. Craven in 1911. All persons asked about the matter stated that the stench arising from the river as far down stream as the Vernon intake was decidedly offensive. Statements were also made to the effect that dead fish were found in considerable quantities below the sewer, even as far down as the Vernon intake.

A canning factory in operation in North Vernon drains its refuse into the Muscatatuck River just below the North Vernon dam. This refuse floats on the surface of the water as far down stream as the Vernon intake. Within the last two years the sewage system has been considerably enlarged, resulting in an increased volume of sewage.

**DISCUSSION OF RESULTS.**

The Muscatatuck River at North Vernon is a fairly pure stream, but some method of purification should be used before it can be recommended as a safe drinking water.

The character of the outflow of the sewer indicates that it is not a typical sewage. The absence of suspended matter and the very low oxygen consumed factors indicate a greatly diluted sewage or one in which septicization has taken place. As the sewage flows through an underground passage into which quantities of surface water drain, we may well expect a great dilution. This is especially

likely to have been the case at the time of the survey, for during the month of November, 1913, the rainfall was abnormally high, being for that time 6.18 inches. The precipitation for the preceding eight days was 2.36 inches and for the day preceding the beginning of the survey .56 inches. Then, too, the average chlorine factor found was 3.23 per 100,000 as compared with 11.4 per 100,000 in the sample collected by Dr. Hayden in July. This would indicate a dilution of at least three times.

It is quite possible that the underground passageway serves as a natural septic tank and by this means removes a large portion of the organic matter. The holes would be flushed out during times of heavy rains.

In studying the different factors as they appear in the samples taken at the two intakes, the bacterial content is increased over three times, the oxygen consumed has decreased and the nitrites have come back to normal after a rise following the sewage inflow. There has been a slight increase in the chlorine content.

#### SUMMARY.

The Muscatatuck at the Vernon intake, with an average bacterial content of over 2,000, is not a safe supply and should not be used until purified or treated in some approved manner.

The sewers of North Vernon contaminate this stream to a considerable extent. Sewage bacteria pass into the stream and seriously pollute it, endangering the health of the community using it as a supply.

During times of low water, the presence of decaying sewage and canning factory refuse along the banks of the stream is a public nuisance, and should be eliminated by the installation of sewage disposal plants, by both the city of North Vernon and the canning factory located at North Vernon.

Respectfully submitted,

JOHN C. DIGGS.

#### ADVICE IN REGARD TO THE WATER SUPPLY AT LIBERTY, INDIANA.

INDIANAPOLIS, February 3, 1914.

Mr. R. M. Duvall, Town Clerk, Liberty, Ind.:

Dear Sir—The State Board of Health received from you on January 13, 1914, a request asking for advice and information re-

garding the water supply. In compliance with it, I visited Liberty on January 27, 1914.

The supply is drawn from the springs, three of them furnishing about 75,000 gallons; one located about 300 feet from the pumping station, furnishing about 40,000 gallons and the other two about 600 feet away, furnishing about 35,000 gallons. Additional water is secured from a large pond fed by springs, when the consumption exceeds the output of the three springs. It has been found necessary to make use of the pond water the greater part of the summer months and during the past winter, it has been used frequently. The pond water has a decided taste and odor, making the supply very disagreeable to use, and many complaints have been made.

The water flows by gravity from the springs and pond into the large concrete reservoir, which is 75 feet in diameter and 10 feet deep, with a capacity of 330,000 gallons. A McGowan compound duplex horizontal pump of 1,000,000 gallons capacity forces the water from the reservoir to the standpipe, 24 feet in diameter, 24 feet in height, with a capacity of 75,000 gallons. A small McGowan single duplex horizontal pump of 150,000 gallons capacity is held in reserve, but it is in bad shape and little dependence can be placed upon it. The installation of another large pump is being considered.

From the standpipe, two miles of main carry the water to about 50 per cent. of the people, the total population being about 1,400. The average daily consumption is 75,000 gallons.

The water supplied by the three springs and the pond has been found inadequate and the town board desired information and advice regarding an additional supply.

The limit in the quantity of water obtainable from the springs has apparently been reached. Consideration has been given to improving the quality of the pond water, but it is not believed that the quantity of water available from this source will justify the cost of improvement. The installation of a filter plant for this purpose will not remove the taste and odor, the objectionable features of the water, and the expense will be too great for it to be considered.

The exact flow of the springs under the pond could be determined by draining it. If such a step was taken the feasibility of improving the springs and conveying the water to the concrete reservoir, in a manner similar to that of the three springs now in use, could be definitely determined. The draining of the pond could be done with practically no cost attached, and this is advised as the first step to be taken.



A well supply is to be considered next if the springs under the pond cannot be developed. It will be necessary to sink test wells to determine the quantity of water available. Very little is known of the amount of water available from deep wells. Wells have been previously tried by the water board, but they were comparatively shallow, and but little success was achieved due to the quicksand underlying the town interfering with the pumping. One deep well was put down by the creamery company, and, when used, furnished an unlimited supply for the pump installed. The company, however, could not afford to operate its pump when water was furnished by the town at the very low rate it does.

To supplement the spring supply, the water, obtainable from a dug well might be sufficient and a small dug test well should be sunk to determine the underground supply near the pumping station. In case there was no ground water available from shallow wells, a deep driven well should be sunk, or arrangements might be made with the creamery company to test the supply available in their well with a view to acquiring it, if it is a success, or sinking deep wells at the pumping station.

It is believed that sufficient water can be obtained from deep dug wells, but the expense connected with their installation and operation is large and for this reason further development of a spring supply under the pond or the dug wells should be considered first.

Until steps for the development of a further supply are taken, all possible waste of the present available supply should be prevented. Considerable waste was found.

At the corner of High and Market streets a leak was measured and a loss of 254 gallons per day revealed. Two taps were found open on the same day, discharging at the rate of 864 gallons per day of twenty-four hours. The use of self-closing faucets would eliminate a large amount of the present waste. The installation of meters upon the large consumers is advised. To save the great amount of water used upon the streets in summer, oiling is advised.

Yours very truly,

JAY A. CRAVEN,  
Sanitary Engineer.

INDIANAPOLIS, IND., March 10, 1914.

Dr. H. E. Barnard, Chemist, Food and Drug Commissioner, Indianapolis, Ind.:

Dear Sir—I herewith submit my report, "An Investigation of the Water Works Plant at Aurora, Indiana."

I devoted three days, March 3d, 4th and 5th, inspecting this plant, studying the operation of the filters, and examining samples of water collected while the plant was being operated under different conditions.

The condition existing at Aurora is typical of what may take place any time the proper operation of a filter plant is disregarded. The Ohio River is a sewage polluted stream and the efficiency of the purification plant is a very vital factor in determining the health of a community using water from this source. Neglect in any of the plant operations may result in the sickness or death of the consumer buying this commodity. It becomes the duty of a water company to install the most efficient equipment and to practice proper operations of such apparatus.

All changes suggested in the plant at Aurora, Indiana, will, I am sure, better the supply of drinking water furnished the public at that place.

Respectfully submitted,

JOHN C. DIGGS.

## INVESTIGATION OF THE AURORA WATER WORKS PLANT.

JOHN C. DIGGS.

The Aurora Water Works System, built in 1904, is owned and operated by the Indiana Public Service Company. The supply is taken from the Ohio River and subjected to coagulation, sedimentation, filtration and hypochlorite treatment before being pumped into the mains.

Two Van Wie centrifugal pumps of 1,000,000 gallons capacity each, draw water from an intake extending into the river two hundred feet and elevate it to the two sedimentation basins whose capacity is 1,000,000 gallons. The chemicals, iron sulphate and lime are here applied. From the sedimentation tanks the water flows by gravity into two New York Continental Jewell filters of 500,000 gallons capacity each. These filters were used at the Louisiana

Purchase Exposition at St. Louis and after the close of the fair were moved to Aurora. Leaving the filters, the water flows into a 50,000 gallon clear well of cypress staves. Two Smith-Valle pumps of 1,000,000 gallons capacity each force the water into a storage tank located on one of the highest hills. This tank has a capacity of 280,000 gallons. The hypochlorite solution is added to the suction line drawing the filtered water from the clear well.

This plant was visited in June, 1911, by Jay A. Craven of this department, and at that time samples were taken of the raw, settled and filtered water. Examinations of these samples indicated such a poor efficiency of the filter beds that the installation of hypochlorite treatment was recommended. The inefficient condition of the filters was laid to the irregular feeding of the coagulant.

Early in January, 1914, a rather serious epidemic of typhoid fever developed in Aurora. Examinations of a number of sets of samples taken from the taps of the public water supply disclosed the presence of sewage bacteria in many cases. The bacterial content of the samples indicated something seriously wrong with the purification operations. At the request of W. A. Winn, General Manager of the water company, an inspection of the equipment and operation of the plant was made by a representative of the Indiana State Board of Health.

During the inspection, washing of the filters, feeding of chemical solutions and general operations of the plant were studied. On March 3d, 4th and 5th samples were taken from various sources of the plant and bacterial examinations made. A laboratory was set up above the office of the water company, thereby permitting an examination of the samples soon after collection.

During the course of the investigation of the plant some minor changes in operation were made at once. Other alterations which could not be made immediately were recommended to be carried out as soon as possible.

One of the first objectionable features to be noted was the irregular feeding of the iron sulphate solution used as a coagulant into the raw water. The iron sulphate was put in solution in two cypress tanks of about 800 gallons capacity each. From these tanks it was pumped into the raw water main leading to the sedimentation tanks. No definite amount of the chemical was put in solution, but a shovelful was added at such times as was deemed necessary in the judgment of the engineer. From the appearance of the coagulated water, the slight turbidity of the filter effluent and the condition of the filter beds upon dropping the water from

them, it appeared that for a water as turbid as the raw water was at the time of the visit, an insufficient amount of chemical was used. It was advised that the solution tanks be moved from their present position under one of the filters to a separate room from which the solution may be fed by gravity to the raw water mains. The solution should also be made up to a definite strength and this solution fed into the raw water at a rate for proper coagulation. The same condition was found to exist in the case of the lime solution.

For hypochlorite treatment a half per cent. solution of chloride of lime was used. This was fed into the mouth of the suction line drawing from the bottom of the clear well cistern through an automatic feed tank. A micrometer screw valve was used for adjusting for different rates of pumpage. This adjusting screw was entirely out of order, making an accurate rate of feed absolutely impossible. The pumping varies from 6,000 to 30,000 gallons per hour and with such a device for regulating the solution, the application of the chemical at anything like a regular rate was impossible. This, of course, resulted in the addition of an excess amount of hypochlorite solution at times, while at other times an amount too small for proper sterilization was added. To eliminate this objection the adjusting screw was replaced by a one-eighth-inch valve. This gave very satisfactory control and by means of tables indicating gallons per hour for each rate for pumpage, satisfactory chemical treatment was obtained.

Since the filtered water was slightly turbid and the bacterial and bacterial efficiency of the filters decidedly low, it seemed wise that a careful examination of the sand beds be made. An examination disclosed the fact that the filtering materials were so displaced that the filter was of value only in removing the coarser sediment from the water. For the purpose of removal of bacteria it was entirely useless. The gravel was collected in the center of the sand bed extending even above the surface of the surrounding sand. This gravel layer extended to the bottom of the filter and permitted the water to flow freely through it. Near the edge of the filter were similar mounds of gravel. Between the center of the filter and outer edge was a section which was in very good condition for a filter, but of course, any efficiency that this portion may have had was entirely offset by the condition of the surrounding material. In addition to all of this, a very large part of the sand had been washed out of the beds. Filters of this sort should have four to four and one-half feet of filtering material. One filter had three feet and four inches of gravel and sand and the other two feet

and six inches. This fact alone would have been the cause of very poor efficiency.

In an attempt to break up these mounds of gravel and to level the sand stratum over the gravel layer, the filter was washed with the wash water valve open full. A rise of water of fifteen inches per minute was obtained and this pressure, with the rake revolving part of the time, continued for fifteen minutes. As this washing continued an attempt was made to force a rod down through the bed but the mounds of gravel could not be penetrated. The wash water failed to loosen the material and, for the time being, it seemed wise to depend on chemical treatment alone for bacterial reduction.

This condition of the filters may have taken its start from one of three causes: the stoppage of some of the strainer caps preventing the passage of wash waters, too rapid revolution of the rake, or the displacement of the sand and gravel layers when the strainer system was cleaned, some two years since. It seemed hardly possible this displacement of gravel was entirely due to a stoppage of the filter heads. This would have resulted in no such regular ridge formation as existed in this case. It seemed most likely that the condition can be attributed to the last two causes. When the strainer heads were examined two years ago the sand was thrown back in any fashion to best get at the work, without regard to gravel and sand. When the sand was washed with the rake going at twenty revolutions per minute the hydraulic sorting took place, some strainer heads being buried so deeply that it was impossible to force water through them. Over these places the coarser material gradually accumulated and slowly overspread adjacent strainer heads. By continued rapid raking the gravel was drawn to the center until it stood even higher than the sand immediately surrounding it. It is quite clear that such a bed would be a failure as a filter. It will be necessary that the gravel be placed over the filter heads and that the bed be filled to the proper level with suitable sand.

Rate control valves designed to prevent sudden changes of the height of the water above the filters are so worn and out of repair that they work very ineffectively.

In practice the plant is run at full capacity from six to eight hours per day in which time the storage tank is filled. Continuous running at a regular rate would give far better results as far as filtration and chemical treatment are concerned.

To get the plant in an efficient working condition from a point of economy, as well as water purification, it seemed advisable that

it be thoroughly overhauled and remodeled in agreement with the more advanced ideas in water purification engineering. Certain changes about the plant are already under way and several of the recommendations which are made are in agreement with plans already considered. Changes recommended, however, will cover only those points which will assist in bettering the water supply and will in no way deal with certain other points which might be covered by tests made by an efficiency engineer. It does, however, seem highly advisable that such an engineer be employed by this plant while planning the alterations.

To get the plant in proper working condition, it is necessary that the filters be overhauled thoroughly, the gravel placed back in its proper position and the layer of sand be brought back to a suitable thickness. In the meantime, it will be necessary that the health of the consumers be safeguarded by treating the water with hypochlorite solution. The rate of twelve pounds of calcium hypochlorite per million gallons of water appears to be the most suitable rate for feeding the chemical. The coagulant feed must be carefully regulated. Iron sulphate as a coagulant should be replaced by alum as soon as arrangements can be made.

During the investigation thirty samples were collected. Bacterial counts were made on agar at 37°. Tubes of lactose broth were planted and the presence of B. Coli or other gas forming bacteria determined. Judging from the results of this test, it is necessary to treat the water with hypochlorite at the rate of twelve pounds per million gallons to remove objectionable bacteria.

BACTERIAL EXAMINATION OF SAMPLES FROM AURORA WATER WORKS, AURORA, INDIANA.

Date.	Sample.	Bacteria Per CC.		Pre-sumptive B. Coli.	Remarks.
		Agar at 37°.	Gelatin at 20°.		
Mar. 3. ....	1	450	.....	+	Top of filter No. 1, from river.
Mar. 3. ....	2	500	.....	+	Top of filter No. 2, near river.
Mar. 3. ....	3	180	.....	+	Effluent, filter No. 1.
Mar. 3. ....	4	1,500	.....	+	Effluent, filter No. 2.
Mar. 3. ....	5	40	.....	+	Tap at pumping station.
Mar. 3. ....	6	100	.....	+	Tap in city.
Mar. 4. ....	7	580	.....	+	Top of filter No. 1.
Mar. 4. ....	8	550	.....	+	Top of filter No. 2.
Mar. 4. ....	9	190	.....	+	Effluent of filter No. 1.
Mar. 4. ....	10	200	.....	Gas.....	Effluent of filter No. 2.
Mar. 4. ....	11	85	.....	—	Tap at pumping station.
Mar. 4. ....	12	20	.....	—	Tap at pumping station 16 lbs. hypo.
Mar. 5. ....	13	20	8,000	Gas.....	Tap at pumping station 14 lbs. hypo.
Mar. 5. ....	14	35	3,000	+	Tap at pumping station 7 lbs. hypo.
Mar. 5. ....	15	450	18,000	+	Effluent, filter No. 1.
Mar. 5. ....	16	480	18,000	+	Effluent, filter No. 2.
Mar. 5. ....	17	200	8,000	—	Tap at pumping station 9 lbs. hypo.
Mar. 5. ....	18	6,000	180,000	+	Raw water at river's edge.
Mar. 5. ....	19	4,000	40,000	+	Top of filter No. 1.
Mar. 5. ....	20	3,000	35,000	+	Top of filter No. 2.

ADVICE TO TOWN OF CHESTERTON, INDIANA, IN RE-  
GARD TO SEWERAGE SYSTEM AND SEWAGE  
DISPOSAL PLANT.

INDIANAPOLIS, March 23, 1914.

To the Town Council, Chesterton, Indiana:

Gentlemen—The State Board of Health received from you an application for advice as to the proposed sewerage system and sewage disposal plant for the town of Chesterton.

In response to your request, on March 18th, I visited your town for the purpose of examining the sewer district and considering the plans presented.

The sewer district takes in the main portion of the town and it is understood that the portion outside the district is not to be considered.

A comprehensive system to provide for all future wants will require the proposed sewer to be at a lower depth and this will entail a pumping of the sewage to the disposal plant, the expense of which is too great to be considered at this time. It is proposed to take care of any parts of the town not included in this system by another, in which pumping will have to be used.

For a town where rapid expansion may be anticipated, as at Gary, Indiana, a separate system is best, but this could not be financed in the town of Chesterton and it is advisable to meet the needs of the present time with a combined system, treating the sanitary sewage during dry weather and having an overflow to by-pass the storm water when it is sufficient for disposing of the domestic sewage by dilution.

The adequacy of the proposed sewers to care for the present territory will first be considered. Since the amount of water to be removed determines the size of the sewer, we are concerned with the maximum rates or those near the maximum. The run-off based on the precipitation and the slope and character of the watershed will be considered. Although a weather bureau station is not located at Chesterton, the rate of rainfall at Hammond and Laporte, two nearby cities, will give its approximate rate. From the local office of the U. S. Weather Bureau at Indianapolis, the maximum rainfall in a twenty-four hour period at Hammond for an eighteen year period and at Laporte for a fourteen year period were obtained.

## RAINFALL.

## Hammond—

May, 1896.....	2.12 inches
Aug., 1896.....	2.86 inches
July, 1897.....	6.03 inches
April, 1905.....	2.00 inches
Sept., 1905.....	2.00 inches
May, 1906.....	2.22 inches

## Laporte—

Aug., 1901.....	2.36 inches
May, 1905.....	2.04 inches
June, 1905.....	2.06 inches
Sept., 1905.....	2.65 inches
Sept., 1907.....	2.88 inches
Feb., 1908.....	2.50 inches
May, 1913.....	2.20 inches

At Chicago one inch of rainfall has been reached in a ten-minute period and many times over one-half an inch has occurred in that period. Judging from the rainfall data above, it is believed that a fair assumption for Chesterton to determine the sewer capacity is a one-half inch rainfall per hour with one-third of this amount as run-off. While this will not be the maximum rainfall in an hour period, economy of construction has to be considered.

On this basis, and considering the area outlined as the sewer district, as served by sewers, the eastern part of the town requires at the grade indicated on the plans, a 20-inch sewer on Porter avenue, the size of the remaining sewers in this district to be increased in proportion.

With the pipe running full and at the grade indicated on the plans the western portion of the town on this basis requires at least a twenty-four inch sewer on Porter from Valparaiso to the proposed treating plant, the remainder of the system in this section to be re-apportioned accordingly.

The depth of the sewer below the surface of the ground needs consideration. In the eastern section the laterals are all nine feet or more below the surface on Roosevelt avenue, dropping down to twelve feet below at Porter avenue and Wilson street. The depth greatly increases the cost of construction. At this depth the system could be extended to cover a much larger area to take care of the sanitary sewage, but the 20-inch outlet on Porter avenue prevents this extension for the carrying of storm water.

The north end of the sewer on Valparaiso street is eight feet below the surface and for sanitary purposes the portion lying just



north of the railroad could be accommodated. The sewer on Station street is about ten feet below the surface. The present limits of the town extend much farther east than shown on the map, and a large portion of this could be accommodated in the proposed sewer for the sanitary sewage.

If a change in the future from the combined to a separate system was desired, the proposed sewer at the grades given would be adequate to serve a much larger district for a sanitary purpose. If, as stated, the present district only is to be served, a saving in cost would be made by a re-establishment of grades.

In a treatment of the sewage, the installation of a more modern disposal plant is advised. A small Imhoff tank can be used in place of the two proposed septic tanks, and it is estimated that it can be built at a less cost than the two septic tanks, the sedimentation in an Imhoff tank to be followed by a further treatment when the conditions require. Although it is believed that the settling period in an Imhoff tank will suffice for the greater part of the year, it may be necessary to follow this by sand filtration. The elevation of the sewers and sedimentation tank are to be such as will provide a sufficient head for a gravity treatment throughout. A grit chamber, to be installed for a settling of sand and heavier particles before the sewage is passed through the Imhoff tank, is advised.

In the proposed design submitted no provision has been made for sludge disposal. If built according to specifications, the cost would be much higher than it need be; a saving may be effected in the amount of cement and reinforcement.

The sand filters are entirely inadequate, and according to the experimental work done at Columbus, Ohio, they would clog and overflow in a short time. There it was found that a rate of 250,000 gallons per acre per day was a satisfactory rate, whereas, the rate here, considering the average daily pumpage as an index, would be over 2,000,000 gallons per acre per day. This does not provide for seepage. To obtain satisfactory results, it is necessary to have two filters in operation with each tank to allow for oxidation in one, while the other is in use and a dosing chamber must be provided to secure the proper results.

If proper protection can be secured against damage from the creek it is not necessary to have the filter beds of concrete.

The depth below the surface is of minor importance except in the matter of cost.

The sizes of pipe selected are too small for use at the grades established.

The treating plant is inadequate in the respects mentioned above and the plans do not meet the approval of the State Board of Health.

Respectfully submitted,

JAY CRAVEN,  
Sanitary Engineer.

ADVICE TO THE BOARD OF HEALTH IN REGARD TO THE  
WATER SITUATION AT LOGANSFORT, IND.

INDIANAPOLIS, April 23, 1914.

Mr. M. Charles Miller, City Inspector, Logansport, Indiana:

Dear Sir—In response to your letter of April 17th, requesting the advice of the State Board of Health in regard to the water situation at Logansport, I visited the city on April 20th and 21st, at which time consideration was given to the progress being made in the construction of the filter plant, to the present hypochlorite of lime treatment, to the desirability of extending the water works intake above the city, to the septic tank at the St. Joseph Hospital and to the surface drainage entering Eel River just above the Davis bridge.

A description of the source of supply and the pumping station is given in the State Board of Health report for 1913. Since that time, plans were made and a contract awarded for the construction of the filter plant. Although the city was advised in June, 1913, by this department to employ a competent engineer to represent its interests, this was not heeded, with the result that the work on the filter plant instead of being completed is now but well started. In addition to this the financial loss to the city has been great.

The seriousness of the water situation is shown by the typhoid situation. Since the first of the year, the typhoid case rate is 450 and the death rate 80. A capable filtration engineer is now employed and a new contract dated the first of this month has been let, which calls for the completion of the plant in 180 days.

The completion of the plant at the earliest date possible is urged to relieve the present situation.

At the present time hypochlorite is being used to treat the supply, but the amount used and the fact that the treatment is not being applied uniformly will only give the people a false idea of security. Two visits were made to the pumping station, and the first time the treatment was being properly applied. On the second visit, however, the orifice was found to be completely clogged, no

treatment reaching the water supply and the regulating box was overflowing because the float valve was not in working order. A much stronger treatment was advised, but the superintendent and the engineer claimed that it attacked the packing of the pump and, as only one is available under the present arrangement, this was not thought feasible. The use of the city supply for drinking and domestic purposes, unless boiled, is dangerous, and the public should be continually reminded of this fact.

Some consideration has been given by different officials to extending the water works intake up stream above the city limits and then emptying sewage into Eel River at different points above the dam. This is not advisable, as it is only a question of time before a serious condition would exist in the river above the dam, and this would have to be abated. Stream pollution is given more attention each year and the time is not far distant when a treatment of sewage will be required, and with this in mind, sewer systems should be so constructed that sewage will be conveyed to convenient points for treatment. Logansport is favorably situated at the present time as there are only three outlets, and they are not far apart.

The proper remedy for the sewerage situation in sections which cannot be served by the present system or extensions to it, is believed to be the construction of a large trunk sewer along Eel River of a sufficient size to care for all future addition to the city in so far as practical. The proposed sewer may tap one of the present lines, if grades and size are sufficient or may be extended to one of the present outlets.

An investigation was made of the septic tank at St. Joseph's Hospital. The population at the hospital is about one hundred. The sewage from the institution passes into a septic tank about 24 feet in length, 5 feet wide and 5 feet deep, with three baffles, the flow going over them. The effluent from the tank flows about 30 feet into a cistern about 24 feet in length, 12 feet wide and 12 feet deep. The plans of the plant were destroyed by the floods of 1913 and the measurements are only approximate, and were obtained from the designer. The cistern is constructed of builder's stone laid with open joints and it has no bottom. The bottom of the cistern is about five feet lower than the bottom of the nearby creek. The liquid seeps into the ground, but close inspections have failed to reveal the entrance of any of it into the creek, which is practically dry in summer. It is not believed that any danger to the water

supply exists from the disposal of the hospital sewage at this point, although it is well to make frequent inspections of it.

Much concern has been manifested in regard to the drainage ditch emptying into the river at the Davis bridge. It drains a large territory southeast of Market, Spear and George streets and flows for about twelve blocks through the city. Its natural course would carry it into the Wabash River, but it is diverted and flows into Eel River. While the filter plant, when in operation, will provide purification to care for the surface drainage into the river, increasing the burdens upon the plant is not advised, in the manner as above stated, where the flow was diverted from its natural course, the installation of a sewer to care for the entire district through which the drainage ditch flows would greatly improve the situation, as it is said that some privies are flooded by the ditch, following heavy rains. It undoubtedly carries considerable sewage pollution at times, but proper sewerage will avoid this and no concern for the potability of the water supply when filtered need be felt.

Respectfully submitted,

J. A. CRAVEN,  
Sanitary Engineer.

#### ADVICE TO TOWN BOARD OF PAOLI, IND.

INDIANAPOLIS, June 13, 1914.

To the Town Board, Paoli, Ind.:

Gentlemen—In response to your request for advice relative to the water situation, I visited Paoli on May 15th and again on May 20th.

After investigating other sources, we have determined that the creek is the only available supply. In connection with this supply it is believed that use should be made of the earth reservoir already constructed. It was built for the storage and settling of the water, but it did not hold the water.

It is therefore recommended that a 4-inch slab be used to line the earth reservoir.

A 4-inch slab, reinforced for expansion only, will carry the load. It will require for bottom and  $17\frac{1}{2}$  feet sides, 2,500 square yards of lining or 280 cubic feet of concrete of a 1 2 4 mixture. This amount of concrete will require 435 barrels of cement, 122 cubic yards of sand and 244 cubic yards of stone which, at the

following prices obtained at Paoli, \$1.81, \$2.00, and \$1.15 respectively, would cost \$1,313 for materials alone. It is believed, however, that a better price can be procured.

Using wire fencing for reinforcing at 30 cents per rod, the cost of the amount required will be \$117.00. Hauling materials would be about \$150.00 and the labor on concrete work at \$1.10 per yard would cost \$308.00. This would make the total cost of improving the reservoir, \$1,888.00.

To receive the lining proposed, all holes must be filled and the ground well tamped and prepared as a foundation of the slab.

A new steam drive for the centrifugal pump is also needed, and the approximate cost of it is about \$250.

The following is a summary of the cost of the improvement:

Cement 435 bbls., at \$1.81.....	\$788 00
Sand 122 yds, at \$2.00 .....	244 00
Stone 244 yds., at \$1.15.....	281 00
Reinforcing 390 rods (42"), at 30 cents.....	117 00
Hauling materials .....	150 00
Labor 280 yds. concrete, at \$1.10.....	308 00
Steam Drive for centrifugal pump.....	250 00
<b>Total .....</b>	<b>\$2,138 00</b>

The cost of concreting the bottom of the reservoir only and installing a new drive for the centrifugal pump is \$1,345, but it is doubtful whether the unlined sides will hold the water.

Very truly yours,

JAY CRAVEN,  
Sanitary Engineer.

## ADVICE TO CITY OF MADISON, IND.

INDIANAPOLIS, June 17, 1914.

To the Common Council of the City of Madison, Madison, Ind.:

Gentlemen—On April 9, 1914, the following letter accompanied by a resolution passed by the Council of the city of Madison was received by the Indiana State Board of Health:

MADISON, April 8, 1914.

Dr. H. E. Barnard, Department of Food and Drugs, Indiana State Board of Health, Indianapolis, Ind.:

My Dear Sir—I am sending you under separate cover copy of the Madison Courier in which is published proceedings of the last City Council meeting. You will observe the resolution invites the State Board of

Health to visit Madison officially at a date to be hereinafter fixed and make tests of the city's water supply. The river valve being now open, and cannot be closed until the river recedes to a 12½-foot stage, makes the time of the invitation indefinite. I will advise you as soon as the river recedes accordingly. The council, as well as the citizens of Madison are much gratified at the idea of your Board's coming here and making the above test.

Very truly yours,

W. O. FORD,  
City Attorney.

In response to this request for advice regarding the quality of water furnished by the public system of the city of Madison, an inspection was made by the Sanitary Engineer and Water Chemist of the Indiana State Board of Health.

The water supply of the public water system of Madison is taken through two 12-inch suction lines extending into the Ohio River. The upper of the suction lines connects with nine infiltration wells sunk six feet in a bed of sand and gravel in the river. The lower line connects with three similar infiltration wells. Each line is also provided with a direct connection with the river through a strainer. By closing valves, however, the strainer may be cut off, allowing water to enter the lines only through the infiltration wells.

On June 15, 1914, the valves, making the direct river connections, were closed and the pumps started. During periods throughout the day and the two succeeding days, samples of water were taken from the supply pumped. The tap used in taking these samples was one located at the pumping station so as to get a supply just as the water left the pumps.

Sixteen samples were taken from this source and two from the river directly above the strainer intakes. In appearance the samples taken from the tap were identical with those taken from the river. All samples were examined bacterially, total counts on agar-agar medium at 37° C. and the presumptive test for *B. coli* being made. The alkalinity of the water was also determined in each case.

## RESULTS OF EXAMINATION.

Sample Number.	Collected.		Alkalinity, Parts Per 100,000.	Bacteria, Per C. C.	Presumptive B. Coli.		Source of Sample.	Remarks.
	Day.	Hour.			In 1.0cc.	In 0.10cc.		
1	6-10-14	8:45	8.8	19,500	+	+	Tap at pump.	Strainer valve open.
2	6-10-14	10:45	9.2	14,500	+	+	Tap at pump.	Drawing from infiltration wells.
3	6-10-14	11:15	8.7	8,000	+	+	Tap at pump.	Drawing from infiltration wells.
4	6-10-14	11:50	9.1	4,500	+	+	Tap at pump.	Drawing from infiltration wells.
5	6-10-14	12:00	8.1	6,000	+	+	River.	Collected direct from river.
6	6-10-14	3:45	8.9	11,500	+	+		Drawing from infiltration wells.
7	6-10-14	4:00	8.6	15,000	+	+		Drawing from infiltration wells.
8	6-11-14	9:25	9.0	5,500	+	+		Drawing from infiltration wells.
9	6-11-14	10:05	8.5	4,500	+	+		Drawing from infiltration wells.
10	6-11-14	10:50	8.7	4,500	+	+		Drawing from infiltration wells.
11	6-12-14	9:10	8.4	3,500	+	+		Drawing from infiltration wells.
12	6-1-14	9:40	8.6	3,500	+	+		Drawing from infiltration wells.
13	6-1-14	10:10	8.8	4,000	+	+		Drawing from infiltration wells.
14	6-1-14	10:40	8.6	3,500	+	+		Drawing from infiltration wells.
15	6-1-14	10:40	8.4	6,000	+	+		Drawing from infiltration wells.
16	6-1-14	11:10	8.8	4,500	+	+		Collected direct from river.
17	6-1-14	11:45	8.8	3,500	+	+	River.	Drawing from infiltration wells.
18	6-1-14	12:00	8.8	4,500	+	+		Drawing from infiltration wells.

+ Indicates presence of B. Coli.

The results of these examinations indicate that the quality of water furnished from this supply is seriously polluted and unfit for drinking purposes.

The number of bacteria per cubic centimeter present varies to a considerable degree. However, the variation is no greater than is usually the case in a contaminated water. The presence of *B. Coli* and other bacteria in the water from the infiltration wells to practically the same extent that they are present in the Ohio River water, indicates that the supplies are identical. The alkalinity determinations show that the water drawn from the wells is not a ground water supply, but rather a surface supply very closely connected with the Ohio River.

So apparent was it that in some manner the walls of sand separating the river from the infiltration wells had been in some way destroyed and a direct connection made with the river that it was determined to allow the water from the storage reservoir to flow back through the infiltration wells. The pumps were stopped and the valve from the reservoir opened. The water gushed up in the river directly over the "wells" indicating quite conclusively that the sand had been broken through and direct connection with the river established.

To make this fact more apparent to the citizens and to emphasize the necessity of an improved water supply, a coal-tar dye, eosin, was fed into these holes in the river bed through which the water was drawn. The water came through the pumps and mains tinted a beautiful red. Infiltration wells or galleries of this type are a failure. They are nearly always made too small to obtain sufficient supply of water from an underground source. When suction is applied to obtain a sufficient supply of water, the sand is sucked into the pump, wearing out the packing and causing excessive wear on the plunger and finally results in the removal of the sand from the well to such an extent that the iron shell is undermined. Soon a cave-in of the river bottom occurs and direct connection with the river supply is established.

Madison has a splendid supply of underground water easily reached by driven wells. This fact is evidenced by the test well already at the pumping station and by the good supply of water obtained at the Southern Indiana State Hospital for the Insane, located a short distance down the river. Analyses of these supplies show both of them to be of good quality.

Every known fact indicates that a suitable number of deep



wells put down on the bank of the river near the pumping station will furnish an abundant supply of good, clean, wholesome water.

For facts regarding the depth, number, capacity and location of these wells, an experienced and qualified water supply engineer should be consulted, for the amount of money expended in such a manner is always small compared with what may be lost by an improperly constructed works.

The important results of this inspection may be summed up in the following sentences:

1. The present supply drawn through the infiltration wells is seriously contaminated and entirely unsuitable for a city supply.
2. The infiltration wells instead of drawing from an underground supply, take the water direct from the river.
3. An abundant supply of good water may be drawn from driven wells located in the river or on its banks.

Respectfully yours,

JOHN C. DIGGS,  
Water Chemist, Indiana State Board of Health.

#### ADVICE TO OAKLAND CITY, IND.

INDIANAPOLIS, July 15, 1915.

Dr. W. H. Smith, H. O., Oakland City, Ind.:

My Dear Doctor—In response to your request dated June 19th, asking for advice concerning the Oakland City water situation, I beg to submit to you, and to your common council a report of my inspection of July 8th of your water works system and the proposed changes of the same.

The water supply of the town of Oakland City is taken from an artificial lake covering about nineteen acres with an average depth of nine feet. This has a mud bottom. The watershed is about eighty acres in extent with two families living on it. The average daily consumption is about 100,000 gallons per day, but the maximum pumpage reaches 150,000 gallons per day during the summer months.

The storage is insufficient, for not enough water is stored during the wet months to furnish water during the late summer months. Each year it becomes necessary to prohibit the sprinkling of streets and lawns in the summer. Complaint is also made on account of the bad odor which occurs when the water in the pond becomes low. At the time of inspection not more than three feet of water stood

in the pond at the deeper parts and street and lawn sprinkling had been prohibited for some months.

In the way of improvement of the supply three propositions are being considered by the City Council, namely: (1) Deep wells, (2) Raising the height of the dam and thereby increasing the storage, (3) Installing a pumping station in the Patoka River, located approximately two miles north of the present supply and bringing water to the lake for sedimentation. These three propositions will be taken up in their order.

#### WELL SUPPLY.

A four-inch well, 110 feet deep located about 40 feet from the present pump house has been constructed. When pumping with a gasoline engine, this well produced eight gallons per minute or at the rate of approximately 11,500 gallons per twenty-four hours. Providing this rate of flow continued for each of a number of wells, fifteen would be necessary to produce the maximum daily pumpage. Very probably the supply of each well would be cut down, in case a number of wells were drilled, so that a decidedly greater number would be required. Also, as shown by the accompanying analysis (sample No. 8,998), the water is decidedly hard. Unless this water was mixed with the present lake supply its use would be objectionable in boilers and water heaters.

The proposed project of lifting this water into the pond and then pumping from the pond does not seem feasible. Should the well supply be used, double connection with the well and lake seems advisable.

#### INCREASING THE PRESENT STORAGE.

The proposition to increase the present water storage by means of raising the height of the spillway and dam 3.17 feet is considered. The present storage capacity has been measured by T. A. Hardman, civil engineer and contractor, and found to be approximately 45,000,000 gallons. With the proposed additional height added to the spillway and dam, the storage capacity would be increased to approximately 73,000,000 gallons.

The present consumption of water in Oakland City is estimated at about 36,500,000 gallons per year. A 73,000,000 gallon storage of water would be a supply sufficient to last two years at the present rate of consumption.

The question next arriving in the power of the water shed to

produce a sufficient volume of water. The watershed of the Oakland City reservoir comprises an area of approximately eighty acres, but in estimating the area of the watershed all exposed water surfaces, such as ponds and lakes should be deducted, because the evaporation from these will balance the amount of precipitation on them. It seems wise therefore to compute this watershed as being only sixty acres. The average yearly rainfall for this region is approximately 45 inches. The surface of the watershed has a rather steep slope and the soil is a comparatively waterproof clay which will bring the rainfall to the pond with only small loss due to percolation into the soil and evaporation. The available amount of rainfall reaching the pond may be safely assumed to be 25 inches per year. This gives for the watershed an average of 40.8 million gallons per year. While this amount of water is sufficient for the present consumption, yet it does not permit any great increase. The chief point in favor of this project is the small initial cost of improvement.

Immediate steps should be taken to remove from the watershed the privy of the residence of Tom Barrett. A watertight vault should be constructed in its place and care should be taken to see that it is kept in proper order. Arrangements should be made so that the drainage from the stables and barnyard of Sam Blythe shall no longer find their way into the pond. Both of these conditions constitute a nuisance and it comes within the power of the health officer or town council to remove them from its water courses.

#### A PIPE LINE TO THE PATOKA RIVER.

The third proposition is the construction of a pipe line to the Patoka River, a distance of 2.6 miles from the pumping station. This, of course, would produce an entirely adequate supply of water as far as quantity is concerned. Water should be pumped into a portion of the present storage reservoir during the season when the supply was of the best quality. It could be subsequently purified as it was needed for consumption. Such an improvement would demand an additional pumping station located on the Patoka River and a treatment plant sufficient to put the water in a potable condition. Such a treatment plant would probably consist of coagulation basins for alum treatment, which would be followed by treatment with hypochlorite of lime.

It is imperative that Oakland City immediately improve her water system. The deep well proposition seems inadequate and

furnishes a quality of water unsuited for municipal use. The Patoka River project is expensive in construction and operation. Unless this water was properly purified by either filtration or coagulation and sedimentation, it would not be suitable for drinking purposes. The enlarged reservoir idea seems to be the direction for improvement, for the present, at any rate. By enlarging the storage capacity, cleaning up the watershed, removing growth from the side of the dam, a good and sufficient supply should be assured for some years.

Very truly yours,

JOHN C. DIGGS,  
Water Chemist.

### THE NEW ALBANY WATER SYSTEM.

INDIANAPOLIS, July 16, 1914.

Indiana State Board of Health, Indianapolis, Ind.:

Gentlemen—Acting under orders, I made an inspection of the New Albany water system on July 15, 1914.

The New Albany water system pumps water direct from the Ohio River to a reservoir located on the tops of some hills. It flows by gravity to the city below.

During September, 1913, the water chemist of the Indiana State Board of Health made an inspection of the New Albany system, making many bacterial and chemical examinations of the city supply. As a result of this inspection, the New Albany Water Company was ordered to immediately treat the water with calcium hypochlorite and to prepare to construct a filter plant, which was to be ready for operation January, 1915.

At the time of the visit July 15, 1914, the Ohio River was at a very low stage of water. The government dyke in the river caused the current to swerve to the New Albany shore. This current carried with it the sewage of approximately 300,000 people located immediately above, and at this very low stage of water the sewage was not greatly diluted. The intake of the city system drew water from this sewage polluted current.

Samples of water were taken from different points of the city system from the raw river water, from the reservoirs and city taps. All of these samples had a slight sewage odor. A bacterial examination of the samples disclosed the following:

Sample.	Source of Sample.	Bacteria per cc. on agar at 37° C.	B. Coli Pre- sumptive Test on .1 cc.	B. Coli Pre- sumptive Test on 1.0 cc.
1.	Tap at office of Water Company..	6,000	—	+
2.	Water as it enters Reservoir No. 1	4,500	—	+
3.	Water as it leaves Reservoir No. 2	2,500	+	+
4.	Water as it leaves Reservoir No. 4 for City Mains.....	1,850	Gas Formers	+
5.	Tap at Tavern Hotel.....	3,000	—	+
6.	Tap at Jail.....	450	—	—

This tremendously high bacterial content with the B. coli Presumptive test showing positive on practically every sample indicated a decidedly dangerous condition of the city water. The fact also that the samples of the treated water showed almost as high a bacterial content as that of the raw water samples (2) indicated poor sterilization treatment.

By proper hypochlorite sterilization of even a sewage polluted water, the bacterial content is reduced to almost the minimum, though, of course, the organic poisons of the sewage remain, making the water undesirable for drinking purposes.

Upon inquiring, it was found that the only treatment applied consisted of dumping three bucketfuls of calcium hypochlorite into the reservoir each morning. By this action, a few gallons of water are given an excess amount of the chemical and the remainder of the day's supply is left untreated. This, of course, results in the presence of untreated water in the city mains and throws upon the city of New Albany the liability of an epidemic of any of the water-borne diseases, such as typhoid fever, dysentery or cholera, at any time.

No information could be obtained at the office of the water company or elsewhere regarding any plans the company may have for the construction of a filter plant.

The facts of this inspection may be summarized as follows:

1. The low condition of the Ohio River makes the raw water especially bad at New Albany and calls for greater care in purification.

2. Bacterial examinations of water and a study of method of applying hypochlorite prove that proper treatment of the water is not given.

3. No apparent effort is being made toward the construction of a filter plant.

Respectfully submitted,

JOHN C. DIGGS,  
Water Chemist.

## INSPECTION OF NORTH VERNON WATER SUPPLY.

INDIANAPOLIS, July 24, 1914.

Dr. John H. Green, H. O., North Vernon, Ind. :

Dear Doctor—In response to your request of July 17th, for advice regarding the bad odor of the North Vernon water supply, I inspected the system on July 20th and collected samples from various points for bacterial examination.

The North Vernon water supply is taken from the Muscatatuck River at a point about one-half mile above the city. A dam was constructed some years ago whereby sufficient storage of water may be available for the public system when the stream's flow is less than the city's consumption.

As the result of a shortage in supply during the summer of 1913, the height of the dam was raised four feet during the fall of that year. This construction caused the water to back up for a distance of three miles above the dam. Vegetation growing along the banks of the river was submerged and with the coming of the hot weather during the summer months decomposition took place.

About the first of July the city water acquired a decided odor which became stronger as the hot weather continued. The stench from the water became so strong that it was quite noticeable and objectionable in the bath room, kitchen and even in street sprinkling. It was so nauseating that many of the consumers refused to use it in the kitchen and for drinking. People turned to the use of well waters, which in this section is especially liable to pollution by sewage. On account of the geological formation, a fissured shale, sewage frequently travels directly from the outhouse to the well. Such wells are extremely liable to be the cause of an epidemic of typhoid fever or other enteric diseases.

Not only are people disposed to cease using the city water at times of low water but also during periods following heavy rains when the river becomes so turbid that it is entirely unfit for domestic use. Such a rain occurred on July 17th and on the 20th, the river was quite muddy.

Three samples taken from the city system showed the following results:

Sample.	Source.	Bacteria per cc. on agar at 37°.	B. Coli Presumptive Test.
1.	River at dam.....	1,100	+
2.	Tap—Dr. Green's .....	1,000	+
3.	Tap—Metropole Hotel .....	1,200	+

The bacterial examination indicates that the water is entirely unfit for a city supply. While it is true that the samples were taken at an unfavorable time, it must be remembered that the consumer must have water to drink at all times of the year. A supply, even though only occasionally bad, is not fit for drinking purposes at any time, for the consumer never knows when the water is good or bad. It must also be remembered that a supply taken from a stream flowing through even a sparsely settled section is liable at any time to become polluted and may be the cause of a very serious epidemic. No surface water should be used for drinking purposes without a reliable purification of some sort. This purification may consist of filtration, sedimentation, plain or with a coagulant, or by means of chemical treatment with calcium hypochlorite.

A filtration plant is very expensive both in construction and operation and is not usually to be recommended for a city using less than one million gallons of water per day. Hypochlorite treatment will assist only in killing bacteria and in no way remove the turbidity from water. In the case of North Vernon the use of sedimentation basins and a coagulant followed by hypochlorite treatment suggests itself as being the most feasible. This method of purification has been employed quite successfully at Bedford, Indiana, for some time. A sedimentation plant properly constructed and operated will give at all times a clear water free from disease-causing bacteria.

North Vernon should have a better water supply. The soil formations occurring there make wells unsafe as a source of drinking water. This forces an additional burden upon the city. To successfully flourish in health, wealth and happiness the city must meet this duty.

Summarizing, the results of this inspection may be stated as follows:

1. The odor of the North Vernon water system was largely due to decaying vegetation along the banks of the river.
2. Bacterial examinations show the water to be polluted with *B. Coli*.
3. North Vernon needs a safe water supply, which can be best obtained by means of purification of their present supply by sedimentation and hypochlorite treatment.

Very truly yours,

JOHN C. DIGGS,  
Water Chemist,

## INVESTIGATION OF THE WATERS OF PRAIRIE CREEK.

INDIANAPOLIS, August 31, 1914.

Dr. H. E. Barnard, State Board of Health, Indianapolis, Ind.:

Dear Sir—Acting under orders, I investigated on August 3, 1914, the complaint set forth in the separate petitions signed by the trustees of Center Township, Washington Township and Sugar Creek Township, all of Boone County, Indiana. All three petitions were identical in regard to the complaint. The following is a copy of the petition of one official.

“To the State Board of Health of the State of Indiana:

The undersigned respectfully represents to said Board that he is the Township Trustee of Center Township, in Boone County, in the State of Indiana; that Prairie Creek runs into and through said township; that the city of Lebanon, in Boone County, Indiana, is discharging and is permitting to be discharged into said Prairie Creek the sewage from said city and is thereby materially injuring, for domestic use, the character of the water in said Prairie Creek to the injury of the public health and comfort.

The undersigned, therefore, respectfully prays said State Board of Health to forthwith inquire into and investigate the conditions herein complained of as provided in the Act of the General Assembly of the State of Indiana, approved February 26, 1909, page 60.

(Signed) JOHN L. SANDERS,

Trustee of Center Township, Boone County, Indiana.

Dated at Lebanon, Indiana, this 11th day of February, 1914.”

I report on the investigation as follows:

The city of Lebanon, Boone County, Indiana, has a population of 5,474 (1910 census). The city has in use about six miles of sanitary sewers. Another branch is now being constructed which will add three miles to the lines. No measurements of the volume of sewage have been made, but Walter Whitecotton, city engineer, estimated that 900 families are now connected to the sewer and judged that the extensions now being made would raise the house connections to 1,300. With these figures as a basis it is fair to assume that each of the 900 families has 4.5 members and that the per capita volume is 100 gallons per day. By this calculation the volume of sewage amounts to 405,000 gallons per day.

The Lebanon city sewers have one outfall which flows into Prairie Creek. Prairie Creek is a very small stream whose dry weather flow is practically nothing. At the time of the inspection the brooklet could be crossed by a single step at almost any point.



At a point just below the outfall of the sewer a pool was formed. Here the sewage collected and gradually decomposed, giving off a very disagreeable odor.

Prairie Creek has no tributary for some distance below Lebanon and during the dry seasons when the rainfall is small, the bed of the stream serves as an open sewer. Farmers living along the banks complain of the very offensive odor which rises from the water during periods of small flow. They assert also that their stock refuse to drink the water, and that fish, killed by the putrefying matter, collect along the banks of the stream.

Two samples of water were taken from Prairie Creek, one just above the outfall of the sewer and one about two miles below this point. The samples were analyzed in the water laboratory of the State Board of Health with the following reports:

	Sample taken 100 yards above sewer outfall.	Sample taken two miles below sewer outfall.
Free ammonia .....	.1300	.8460
Alb. ammonia .....	.0400	.0820
Chlorine .....	2.8	21.8
Nitrogen as—		
Nitrates .....	.0000	.0000
Nitrites .....	.0000	.0024
Alkalinity .....	.16	.01
Odor .....	Earthy	Strong sewage
B. Coli Presumptive—		
Test on 1 cc. ....	+	+
Bacteria per cc. on agar at 37° .....	280	30,000

This report indicates that even at the very low state of water existing in Prairie Creek, the water above the mouth of the sewer is of fair quality. It is an average creek water during the summer months.

The sample taken below the sewer shows that the stream is grossly polluted at this point. It produces an offensive odor and is unfit for use in watering stock.

During this investigation, persons interviewed gave evidence as follows:

A. J. Kersey (farmer, living two miles below sewer outfall), said: "The odor from the water is decidedly offensive and not fit for cattle to drink. In fact, they will not drink the creek water when it is the worst."

A. E. Crawford (farmer, living eight or nine miles below sewer outfall), said: "The odor is bad. Dead fish collect along the bank

of the stream. These rot and add to the offensive odor of the creek water."

J. P. Staley (banker of Lebanon, owns farm ten or twelve miles below sewer outfall), says: "The sewage water kills the fish. These collect along the stream's banks and are a nuisance."

In speaking of the matter, Hon. J. W. Shelby, Mayor of Lebanon, said: "The complaint is justly made and the condition should be remedied. The city of Lebanon is ready to do the right thing about the matter, but finance requires that it act slowly."

From interviews with different persons it was the general opinion that the city of Lebanon is ready to construct a sewage disposal plant but does not wish to do so until they have been officially ordered to do so.

#### SUMMARY.

The sewage of the city of Lebanon flows into Prairie Creek and causes a nuisance to the section bordering on the stream.

The water of Prairie Creek is made foul and offensive, and unfit for domestic use by reason of the discharge of the sewage of the city of Lebanon into it.

It is recommended that the city of Lebanon be ordered to abate this nuisance by elsewhere disposing of its sewage or by the construction of a purification plant.

Respectfully submitted,

JOHN C. DIGGS,  
Water Chemist.

#### TYPHOID FEVER AT MICHIGAN CITY.

INDIANAPOLIS, September 1, 1914.

Dr. H. E. Barnard, Chemist, Indiana State Board of Health, Indianapolis, Ind.:

Dear Sir—Following a request from Dr. Whitfield Bowers, secretary of the Michigan City Board of Health, an investigation concerning a typhoid fever epidemic was conducted in that city on August 25th. Previous to this request the City Board of Health had made investigations whereby they obtained data regarding the number of cases, age, sex, source of water supply and source of milk supply of all patients affected. Of eight cases reported at the time of the beginning of the investigation by the State Board of Health all were taking milk of one dairyman, viz.: Ed Foldenauer.

This fact naturally led the City Board of Health to investigate the previous record of the Foldenauer dairy and all facts which might lead them to believe that this dairy or some of the Foldenauer family were the cause of the epidemic. The investigation brought out the following facts:

The wife of Ed Foldenauer had typhoid fever eight years ago while she was living at her father's home in Whiting, Indiana. She was then twelve years of age. Several years later she worked as a domestic in a family where typhoid fever developed. This case was not attributed to the girl as a typhoid carrier. Later she married Ed Foldenauer of Michigan City who conducted a dairy in that place. During the fall of 1912 twenty-three cases of typhoid fever developed in Michigan City; twenty-two of these cases were on the route of the Ed Foldenauer dairy. The twenty-third case was an imported one. On about the 5th of August, 1914, eight cases of typhoid fever developed in Michigan City. All of these, the only ones existing in the city, were among the families supplied by the Foldenauer dairy. Three families each developed two cases. This evidence led the city to believe that the milk supply was the carrier of the disease. As a result an order was issued by the Michigan City Board of Health to the effect that Ed Foldenauer should not sell milk in Michigan City. This dairyman, however, failed to obey the order and as a result the advice of the State Board of Health was sought.

This evidence when brought before the investigator from the State Board of Health resulted in the issuance of the accompanying order:

MICHIGAN CITY, IND., August 25, 1914.

Ed Foldenauer, Laporte County, Ind.:

The attention of the State Board of Health of the State of Indiana has been directed to an epidemic of typhoid fever now existing in the city of Michigan City and an investigation has been carried on with the purpose of determining the source of this disease. A number of cases have been discovered among those consumers to whom you are supplying milk and an inspection has been made of the conditions under which you engage in and carry on the business of distributing milk in the city of Michigan City or elsewhere. The result of said investigation is such as to convince this Board that your said business is conducted under conditions which may transmit or promote typhoid fever, and the protection of public health demands the abatement of those conditions.

The water used in the conduct of your business is bad and such as to readily promote and spread typhoid fever and, together with other possible sources of typhoid fever about your premises, renders it dangerous to permit you to continue in business under present conditions.

You are therefore notified to discontinue the furnishing and distribution of milk, directly or indirectly, to anyone whatsoever within the State of Indiana, until such time as this Board shall order otherwise and until such time as a thorough investigation shall disclose the most practicable and efficient means of abating existing conditions.

Yours respectfully,

INDIANA STATE BOARD OF HEALTH.

By John C. Diggs.

The dairy was closed and has remained closed to this date. Both the representatives of the State Board of Health and the Michigan City Board of Health expressed a willingness to free the dairy from this order providing the proprietor would bring his dairy into a sanitary condition and show that the suspected typhoid fever "carrier" would no longer endanger the milk supply.

Although the State Board of Health offered to assist in determining whether or not Mrs. Foldenauer was a "carrier" the offer was refused and to date the order stands with the sale of milk produced at this dairy being prohibited in this State.

Respectfully submitted,

JOHN C. DIGGS.

#### INSPECTION OF STATE FARM.

INDIANAPOLIS, September 17, 1914.

Dr. H. E. Barnard, Chemist, Indiana State Board of Health, Indianapolis, Ind.:

Dear Sir—Orders received September 12, 1913, directed me to make an inspection of the State Farm located near Putnamville, Indiana, for the purpose of studying plans for the construction of a system for furnishing a safe and sufficient supply of water and a system of sewage disposal. I submit the accompanying report.

Very truly yours,

JOHN C. DIGGS,

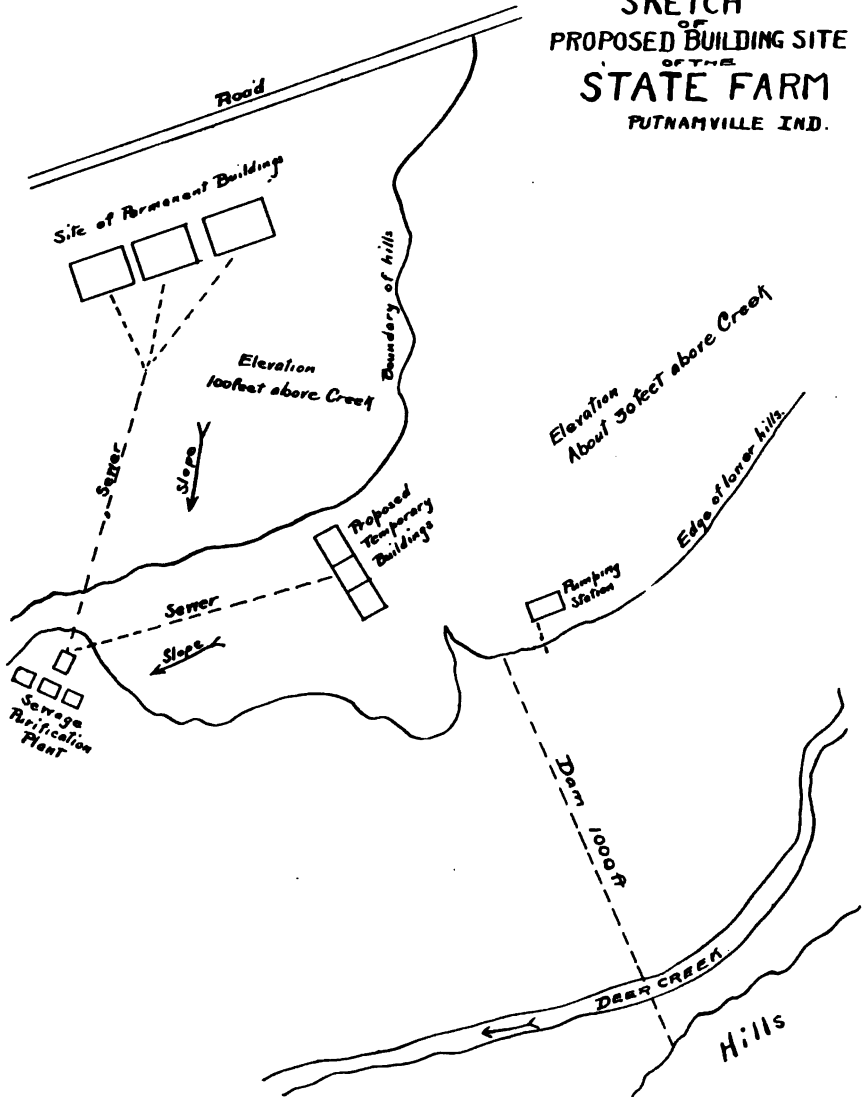
Water Chemist.

#### A SANITARY SURVEY OF THE STATE FARM, PUTNAMVILLE, INDIANA.

JOHN C. DIGGS.

The State Farm, purchased by the State of Indiana for the purpose of furnishing healthful, outdoor work for certain classes of wards of the State, is located on the National Road about one-half mile west of Putnamville. The tract consists of about 1,700 acres made up in part of valley land bordering a stream called Deer

SKETCH  
OF  
PROPOSED BUILDING SITE  
OF THE  
STATE FARM  
PUTNAMVILLE IND.



Creek and in part of rough, rolling sections. All of the area is underlain with Mitchell limestone, a very valuable road metal and useful stone in other particulars.

By means of this tract of land it is proposed to furnish employment for the "short term" prisoners along agricultural lines. The ground is to be put under cultivation and soil treatment and methods of cultivation are to be studied in a scientific manner that, not only the farm may be operated as a self-supporting institution, but that the knowledge derived may be useful to the farmers of the State who own and cultivate similar tracts of land. It is proposed to open up quarries and to construct mills that the stone may be utilized for road metal and for the treatment of the soil.

The institution is to be gradually built up. Temporary buildings are to be constructed for the prisoners, who will build the permanent buildings. The institution will be added to from time to time as requirements demand until in the end it will accommodate 2,000 prisoners.

In the study of the question of a water supply and means of sewage disposal, it has been with the purpose of furnishing permanent systems and not those which might meet only the temporary needs and later have to be discarded on account of their failure to meet the larger demands.

The water supplies of the residents of this tract are taken from shallow wells and springs. Supplies from such sources are always of doubtful quality and, especially, they are not to be depended upon in a country underlain with soluble limestone stratum, as is the case on this farm. The accompanying analysis shows the character of a shallow well water taken from a farm on this area.

#### SANITARY WATER ANALYSIS.

Parts in 100,000.

INDIANAPOLIS, IND., October 5, 1914.

Laboratory No. 9554. From Dr. J. M. King, State Penal Farm, Greencastle, Ind.:

Source of sample, dug well 30 feet, Penal Farm. Odor, slight vegetable; color, 0; turbidity, none; sediment, none; free ammonia, .0000; albuminoid ammonia, .0200; nitrates, 1.0000; nitrites, .0010; chlorine, 7.6; hardness, 30.8; iron, .00; Colon Bacilli, present.

Remarks—This water is polluted and unfit for drinking and domestic purposes.

Very truly yours,

J. C. Diegs,  
Chemist.

Deep wells are usually not a success in this section. Not only is the flow frequently very small but the waters commonly have such a high mineral content that their use in connection with steam boilers is out of the question on account of scale troubles. The accompanying analysis was made on a sample of water taken from a 220-foot well drilled near the site of the proposed temporary buildings. The water was salty to the taste.

#### SANITARY WATER ANALYSIS.

Parts in 100,000.

INDIANAPOLIS, IND., October 5, 1914.

Laboratory No. 9553. From Dr. J. M. King, Penal Farm, Greencastle, Ind.:

Source of sample, driven well 220 feet, State Penal Farm. Odor, vegetable; color, 9; turbidity, much; sediment, very much fine gray matter, free ammonia, .0000; albuminoid ammonia, .0240; nitrates, .0000; nitrites, .0000; chlorine, 25.6; hardness, 24.4; iron, .01; colon bacilli, none.

Remarks—This water is good from a sanitary standpoint, but it contains much mineral chloride matter which renders it unsatisfactory for drinking and domestic purposes.

Very truly yours,

J. C. Dices,  
Chemist.

Deer Creek, a small tributary of Big Walnut, offers a possibility as a supply. This stream has a length of approximately fifteen miles above Putnamville and a drainage basin whose average width is four miles, giving the watershed an area of approximately sixty square miles. The upper portion of the drainage basin of Deer Creek is rolling with hilly sections bordering the stream. The lower portion is decidedly hilly with bottom land varying from one-fourth to one mile in width. Limestone frequently outcrops in the ravines. The region is characterized by its many sink holes and small caves. Hills bordering the stream are made up of a sandy clay, while the river bottoms are of a very sandy loam, sometimes gravelly.

During seasons of heavy rains the run-off is rapid, frequently the stream climbs out of its banks. The soil, however, absorbs sufficient water that even during very dry seasons it is given up to the stream through small springs which are present in practically all the ravines.

During an exceedingly dry season the "above ground" flow of this stream is practically stopped in places. The water, which has flowed beneath the surface at these points, reappears farther down the valley of the stream.

This stream, which has an abundant supply for an institution of this size, during at least nine months of the year, apparently offers the best solution as a source of water. By means of a low dam just above the proposed site of the main buildings of the institution a sufficient supply could be obtained for all times of the year. The water could be removed from the bed of the stream by infiltration "leads" which would drain into a central cistern, or it could be pumped directly from the stream into a basin for sedimentation and other purification. The infiltration system has been in operation at the Greencastle water works plant for a number of years where it has worked quite successfully in producing a potable water.

The accompanying analysis shows Deer Creek to be a typical stream which receives no pollution other than the surface washings of an agricultural section. Such a water would be easily purified.

#### SANITARY WATER ANALYSIS.

Parts in 100,000.

INDIANAPOLIS, IND., October 5, 1914.

Laboratory No. 9555. From Dr. J. M. King, State Penal Farm, Greencastle, Ind.:

Source of sample, pool from Deer Creek, Penal Farm; odor, earthy; color, 9; turbidity, slight; sediment, slight; free ammonia, .0120; albuminoid ammonia, .0340; nitrates, .0060; nitrites, .0002; chlorine, .4; hardness, 19.6; iron, .01; colon bacilli, present.

Remarks—This is a typical stream water containing *B. coli* and much organic matter and in its present condition is unsatisfactory for drinking and domestic purposes.

Very truly yours,

J. C. Diggs,  
Chemist.

An institution housing 2,000 men demands a sanitary sewer system. At the proposed site of the buildings of the State Farm such a system could easily be constructed without endangering the water supply. The elevation of the ground of the proposed temporary buildings is at least thirty feet above the stream. Furthermore the land lies in such a form that any sewage could easily be conducted by drains down the valley where a sewage purification plant might be constructed. The difference in elevations of the stream and buildings is sufficient to allow the construction of Imhoff tanks and contact beds or any other sewage purification system. The accompanying rough sketch shows the layout of the land near the proposed building site.



The work of the survey may be summarized as follows: (1) Shallow wells and springs of this tract are unreliable and likely to be polluted; (2) deep wells furnish only a small quantity of water and this is frequently too highly mineralized to be a good water for the institution. (3) A supply taken from Deer Creek offers the best solution of the water supply question. (4) Natural drainage conditions permit a sanitary sewerage system with purification plant without endangering the water supply.

Respectfully submitted,

JOHN C. DIGGS,  
Water Chemist.

**A SANITARY SURVEY**  
**OF**  
**VINCENNES, INDIANA,**  
**1914.**

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**JOHN C. DIGGS, A. B.**

## INTRODUCTION.

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A sanitary survey is a study of the relation of environment to health and disease. In its broadest sense sanitation considers such matters as food, water, air, soil, disposal of wastes, ventilation and disinfection. In the early days people lived more apart than at present and if their homes were poor structures, they were lived in only a few hours of the day and if they were inadequately lighted they were, at least, well ventilated by the cracks and crevices left during their construction. Men drank from a spring or a stream, at that day undefiled by the waste of cities on its upper course.

But with modern civilization and modern luxuries come the problems for the chemist, bacteriologist and sanitarian. Our rivers are no longer clean and even the water deep down in the earth has been befouled by the filth dumped upon the surface of the ground.

This report is the result of the study of certain phases of the question of sanitation in one of our Indiana cities. The city selected for study is perhaps in no worse condition than many towns of similar size in this country, and in some respects nature has been unusually kind to this city in helping to correct man's abuses. To study the character of the water supply, the methods of waste disposal and the relation of public health thereto has been the aim of this investigation.

## A SANITARY SURVEY OF VINCENNES, INDIANA.

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During the summer seasons for some years past the water laboratory of the Indiana State Board of Health has devoted its attention to the conducting of sanitary surveys on the important streams and waterways of the State. This work was carried on with great profit and has furnished our only knowledge of the pollution of these water courses by the sewage of our cities and trade wastes of the factories of the State. These surveys were made by means of a floating chemical and bacterial laboratory which was moved from place to place in the course of the work.

Vincennes was selected as a point for sanitary study for the summer of 1914. This city, with a population of about 17,000, perhaps the oldest town in the State, is a representative Indiana city. In this survey every private well in the city was examined chemically and bacterially, every back yard and every privy vault was inspected and classified, and data was obtained from every household regarding the health conditions during the past years. Special attention was paid to the study of typhoid fever.

Vincennes was selected for study for the following reasons: (1) because probably a greater proportion of the population depend on shallow wells as a source of their water supply than in any other city in the State; (2) it is adequately supplied with an extensive water works system furnishing good filtered Wabash River water, so that in case any private wells were condemned the citizens would not be left without an available supply of water; (3) the city has the most complete sanitary sewer system in the State, but on account of the recentness of its completion it is used by only a small percentage of the people. Practically all of the residents maintain out-of-door privy vaults and cesspools. The very flat topography and geological formation, sand and gravel, upon which the city is built, make certain that all pollution of the soil must eventually, after some possible purification, come in contact with the water supply furnished by the shallow wells.

### ACKNOWLEDGMENTS.

In compiling the report of the work of this survey all available reference to any matters which affect the sanitary condition of this

region have been utilized. The publications of the State Geological Department and the U. S. Geological Survey, and a report on the Vincennes Sewerage, by Herring and Fuller, consulting engineers, has proven especially useful.

The field work of the survey was greatly aided by the assistance rendered by Hon. J. M. House, Mayor of the city of Vincennes, Dr. C. L. Boyd, secretary of the City Board of Health, H. T. Watts, city engineer, and L. J. Weisenberger, superintendent of the Vincennes Water Supply Company.

During a considerable portion of the summer the field work was very efficiently conducted under the direction of A. R. Tucker, an assistant in the Indianapolis laboratories of the Board of Health. Such a thorough survey would not have been possible except for the uncompensated assistance rendered by students taking scientific courses in the colleges and universities of the State. The students making up this very able corps were Fred Donaghy and Willard Hutchings of Indiana University, Floyd Huff of Butler College, Clyde Winchester of Franklin College, Jay Ford of DePauw University, and Lloyd Foreman of Vincennes University.

#### EARLY HISTORY OF VINCENNES.

Robert LaSalle, the French explorer-missionary, traveled from Detroit up the Maumee in the year 1680, where he erected some stockades near the site of the present city of Ft. Wayne. Later during the same year he portaged overland to the valley of the Wabash and passed down the stream to its mouth. During his explorations he established several camps, and among them was one on the left bank of the Wabash about twenty miles above the mouth of the White River. It is said that the French Jesuit missionaries held mass before the astonished savages in a permanent mission established in the year 1702.

The early settlers of this section were made up largely of trappers and traders who came up the Mississippi to barter the wares of civilization for the furs of the Red Man.

Absolute facts concerning this settlement are somewhat obscure, nevertheless, its occasional mention in authentic documents shows this post to have played some small part in our American Revolution. Fort Sackville, held by a captain of the English Army, was stormed and taken by George Rogers Clark who led a small band of recruited men across the flooded lands of lower Illinois. The post became known as Vincennes after Count F. M. Vincennes, as early as 1749. Some time after the end of the Revolution, Vincennes

became the capital of the northwest territory. The home of William Henry Harrison, the first governor of the territory, still stands. Ft. Knox, located four miles north of the present city, was one of the stockades established about 1804, to protect the early settlers from the savages who traveled on the broad thoroughfare of the Wabash River.

Largely on account of the swampy nature of the land, road building was somewhat retarded. In early days practically all the transportation was carried on by means of the water. In speaking of this section of the State, Wolfe, a historian says, "Hundreds of flatboats annually descended the Wabash and White rivers, the trade of the Wabash River becoming immense."

In 1831, during the period between March 5th and April 16th, 54 steamboats arrived and departed from Vincennes. It is also estimated that at least 1,000 flatboats entered the Ohio from the Wabash during this same period.

During later years on account of the frequent low condition of the river, transportation was diverted to roads. Eventually railroads were built, so that now Vincennes is one of the most flourishing railroad centers of southern Indiana.

#### PHYSIOGRAPHY AND GEOLOGY OF KNOX COUNTY.

The surface of Knox County is generally flat or gently undulating, although, in a few places it is quite hilly. Owing to the low elevation and flatness, the southern portion of the county was originally quite swampy. By artificial drainage the surplus water has been removed and the land is in very good condition for farming except during times of extremely high water or heavy rainfall.

The entire surface is covered with Pleistocene deposits, varying in depth from 100 feet in some of the old valleys to less than five feet on the uplands. There are exceptions to this however, notably in the northern portion of Vincennes, which lies in the valley of the Wabash and scarcely twenty-five feet above the low water mark of that stream, where the rock formation lies only ten to twelve feet below the surface.

The elevations of points in Knox County range from 390 to 600 feet, only a small portion, areas bordering the stream, lies below the 400-foot elevation. Practically all of the western portion of the county lies below a 425-foot elevation. Running north from Decker is a ridge of hills which terminates in high uplands in the upper boundary of the county.

The first underlying consolidated formation is a conglomerate

known as Merom sandstone. The formation ranges from twenty-five to fifty feet in thickness. Underlying this are the upper or barren coal measures. This formation is comprised of alternating layers of sandstone and shale with an occasional thin layer of "rash" coal of no economic value. The total thickness of these formations is about 300 feet. Underlying the "barren" coal measures are the workable formations. In the western half of the county they lie at too great a depth to be of economic value. At Vincennes coal VI is only 35 feet above sea level, or at a depth of about 400 feet.

The bench mark in the court house yard has an elevation of 429 feet as shown by government engineers. This point is about 30 feet above the low water mark of the Wabash River which is taken as the city datum. The city of Vincennes is abnormally flat, extreme elevations varying from 25 feet to 40 feet, city datum. A small portion of the surface drainage flows directly into the Wabash River, but in the greater portions the water drains to the lowlands east of the city and enters the Wabash through the city ditch.

The high water mark of the Wabash is practically twenty-five feet at Vincennes. This means that a large portion of the town would normally be under water during excessive stream elevation. This is but partially true, for large portions of the city, although naturally low, are protected by levees. The storm water sewer system is equipped with check gates to prevent the water backing up into the streets through the sewer system. The sanitary sewer system is assisted by a pumping station which forces the sewage into the river during periods of high water.

Vincennes is built on a mammoth sandbar of the giant river which once flowed in the valley of the Wabash. This formation averages about thirty feet in thickness and is underlaid by Merom sandstone. However, the thickness of the sand layer is by no means uniform, varying from ten to sixty feet. In the region of the present fair ground is a muck formation. This area, which is somewhat low in elevation, evidently was a portion of an old bed or side channel of the Wabash which probably flowed through the depression now followed by the city ditch. Kelsos Creek, since diverted directly to the Wabash, probably once flowed through this area.

#### WATER BEARING STRATA.

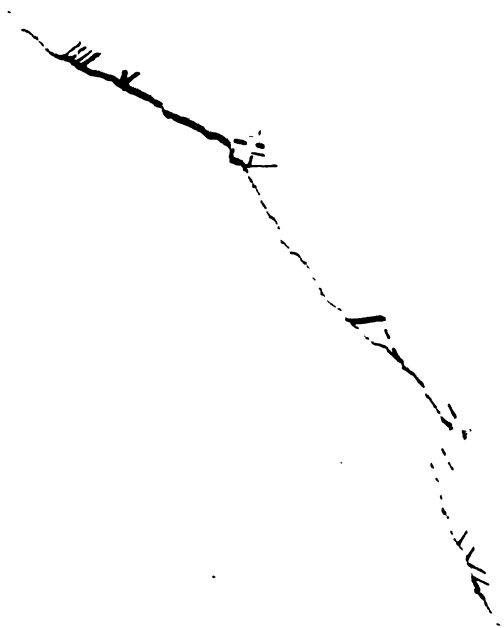
A well located in practically any portion of Vincennes may obtain water from the upper sand and gravel layer. Many of these





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1



wells, however, give only a very short supply of water and frequently during the late dry summer months fail entirely.

The Merom sandstone is not a water bearing stratum. In many of the drilled wells which reached the upper or barren coal measures good water was obtained. In some cases this water is slightly mineralized, high iron content being an especially objectionable feature.

#### GENERAL OUTLINE OF METHODS OF CONDUCTING WORK.

The field work of this survey was conducted from headquarters which were established on the floating laboratory used on the earlier surveys of the Wabash River and the west fork of the White. The boat, somewhat altered in construction after the two river surveys, consisted of three cabins. The "fore" cabin constituted the laboratory equipped for making chemical and bacterial examinations of water samples. In this room also were located an ice-box for storing media and food supplies, and 37° incubators for bacterial work.

The "midships" cabin served as a bunkhouse for men, hanging cots which might fold up against the walls being provided, and as a dining-room, the "aft" cabin did service as kitchen and steward's quarters. The boat was moved up and down Vincennes' two miles of river front in order to be as close as possible to the section of the city being inspected.

Too much credit cannot be given to the corps of assistants who carried on the field inspections and laboratory work. Several of these men were willing to serve without pay in order that they might benefit by the experience of actual field work in conducting sanitary studies. The corps was made up entirely of men taking scientific courses in the colleges and universities of the State.

In carrying on the field work the men worked in groups of threes. One of these men visited the house and obtained data from the householder. This data consisted of the name and address of the resident, owner of property, source of water supply, means of sewage disposal, sanitary condition and appearance of the back yard and the health condition of the family. This data was collected on a printed card, on the reverse side of which was later placed the analysis of the sample of water collected at the home. A second man made the inspection of the privy vault and sketched a rough map showing the location of the houses, wells, cesspools and privies of each block. The third man collected the

sample of water from the well. Inspections were made each morning until forty samples of water had been collected, forty being the largest number of samples that could be conveniently handled by the men in the laboratory.

For the convenience of carrying on the survey the city was divided into four sections. Section A comprised the region west of Sixth Street and north of Shelby; Section B, the region directly east of this; Section C, the area west of Seventh Street and Section D, the southeast corner of the city. Each city block was given a number. This system greatly assisted in locating samples, cess-pools and other items of sanitary interest.

# CHART I

## Sample BLOCK CARD used in Sanitary Inspections

Block No. 162

Residence	13
Wells	9
Privies	13
Cesspools	1
Sample Traps	0

Remarks: Cesspool at 816 Block 162 is used for well water only.

### Note

Residence shown thus

Well and Sample Number shown thus

Privies shown thus

Cesspools - -

## CARD USED FOR COLLECTING DATA OF SANITARY INSPECTIONS.

Sanitary Survey by Indiana State Board of Health. No.....

Resident.....Address.....Block No.....

Owner of property .....

Is a privy on premises?.....Type of privy?.....

Distance from privy to house?.....Distance from privy to well?.....

Is a cesspool or septic tank on premises?.....

Remarks .....

Source of water?.....Depth of well?.....Dug or driven?.....

Character of platform and curbing?.....

Means of garbage disposal?.....

Remarks .....

.....

Reverse of same card used for tabulation of chemical and bacterial examinations and interpretation of analysis.

Water Analysis.....Date.....

Appearance—

Turbidity ..... Sediment..... Color.....

Chemical examination (parts per 100,000)—

Chlorine..... Alkalinity.....

Nitrogen as Nitrates..... Nitrogen as Nitrites.....

Oxygen Consumed.....

Bacteria Examination—

Bacteria per C C Agar C 37°C.....

B. Coli presumptive.....

Remarks .....

.....

The chemical factors determined were nitrites, nitrates, chlorine and alkalinity. Total bacterial counts on agar at 37°C and presumptive B. coli tests on 1 c.c. portions were made. Color, odor, turbidity and sediment were also noted.

From time to time a report of the findings of polluted wells and unsanitary premises was made to Dr. C. L. Boyd, secretary of the City Board of Health. In cases of unsanitary conditions the City Health Officer ordered the proper corrections made.

The field work was started June 20 and ended October 17, 1914.

## THE VINCENNES PUBLIC WATER SUPPLY SYSTEM.

The public water works system of Vincennes was established by the Vincennes Water Supply Company in 1886. The raw river water was pumped into a standpipe by two Dean vertical, compound, condensing pumps of two million gallons capacity each. It flowed into the city mains by pressure.

Filtration was first established in 1898 by the installation of four Continental Jewell filters with a total capacity of two million gallons, and six wooden settling tanks of 50,000 gallon capacity each and these filters were replaced in 1906 by six concrete filters of 800,000 capacity each.

During the year of 1914 improvements were made in the plant, a large concrete sedimentation basin, three additional filters, an additional clear well and chemical mixing and storage tanks were constructed. Additional pumping machinery was also installed. As it is now operated, the system is composed of two intakes extending into the Wabash River, two low service pumps for supplying raw water to the subsidence basin, sand filters, clear wells, high pressure pumps, a steam generating plant, a standpipe and a distribution system.

### INTAKES.

Two intakes into the Wabash River are provided, one of sixteen inches extending out into the river 235 feet from low water mark and the other, twenty inches in diameter, being 165 feet out at low water.

### RAW WATER PUMPS.

Originally the raw water was lifted to the sedimentation basins by two Wheeler compound, low service, condensing pumps of 3,000,000 gallons each. In 1914 there was installed a 6,000,000 gallon DeLavelle turbine driven, centrifugal pump for the low lift work.

### COAGULATING BASIN.

The newly constructed subsidence basin is a concrete structure 170 feet long by 70 feet wide by 10 feet deep with a baffle wall running lengthwise. The total capacity of the basin is 800,000 gallons, equivalent to 4.8 hours' treatment on the basis of 4,000,000 gallons, the maximum daily consumption in Vincennes. By the aid of the concrete baffle wall the length of the flow through the basin is

approximately 340 feet. Consequently the maximum velocity is 1.1 feet per minute when the plant is working at the 4,000,000 gallon rate. A solution of alum is injected into the raw water as it enters the coagulating basin.

#### SAND FILTERS.

The filters are constructed of reinforced concrete and are nine in number, each 16 by 17 feet and with a capacity of about 800,000 gallons each. The strainer systems consist of  $1\frac{1}{2}$ -inch galvanized iron pipe leading from a control manifold. The strainer heads are made of brass and screwed into the pipe. All of the drainage system except the strainer heads is buried in the concrete floor of the filter. The filtering material consists of  $3\frac{1}{2}$  feet of sand laid on 8 inches of gravel. The wash water is removed by means of a galvanized iron gutter which runs around the sides of the filter. The filters are washed by means of an upward current of air and water.

#### CLEAR WELLS.

Two clear wells are provided, an old one 13 feet deep and 50 feet in diameter, having a capacity of 200,000 gallons and a new one of reinforced concrete holding 300,000 gallons.

#### HIGH PRESSURE PUMPS.

Four high pressure pumps are provided. These consist of two Dean vertical, compound, condensing pumps of 2,000,000 gallons capacity, installed in 1886; one Worthington, horizontal tandem triple expansion pump of 3,500,000 gallons capacity installed in 1906, and a new Snow cross-compound condensing pump of 6,000,000 gallons capacity.

#### STEAM GENERATING PLANT.

In 1914 there was added to the already efficient steam generating plant a 300-horsepower Heine safety boiler.

#### CHEMICAL MIXING AND STORAGE TANKS.

The chemical tanks consist of two 8x8x16 alum storage tanks and two 5x5x16 hypo-storage tanks and two 3x3 mixing tanks, all built of concrete.

### STANDPIPE AND DISTRIBUTION SYSTEM.

An indirect system of pumping is provided which may, at will, be changed to a direct. The standpipe is constructed of steel, 22 feet in diameter and 200 feet high with a capacity of 568,000 gallons. The water flows from the standpipe through an 18-inch main. The city distribution system consists of 32 miles of mains. Two hundred and eight hydrants are supplied with water. A pressure of about 75 pounds is furnished.

### CONSUMPTION.

The average daily consumption is approximately 2,000,000 with a maximum consumption of 4,000,000 gallons. About 10,000 people depend on the city supply for domestic uses or sprinkling. Basing calculations on a population of 17,000 the per capita consumption is 117 gallons.

### OPERATION.

The plant is operated very efficiently, great care being taken to bring about proper purification by good manipulation of the filters. It is to be regretted, however, that a control laboratory has not been installed. This condition is somewhat relieved by the frequent examinations of the water made in the water laboratory of the State Board of Health at Indianapolis.

### CONDITION OF THE WATER SUPPLY.

Elsewhere in this report will be found a discussion of the sanitary condition of the Wabash River. All that is to be said here is that the Wabash receives the raw sewage of perhaps 155,000 persons above the Vincennes intake, and that this water must be purified in order that assurance can be given that it is free from objectionable disease germs. Examinations of samples during past years have shown that the water was very effectively treated.

During the course of the summer's work at Vincennes samples were taken from the water works plant at different stages of purification. Bacterial examinations gave the following results:

TABLE No. 1.

Samples of Water from the Vincennes Water Supply.

Sample Number.	Date Collected.	Bacteria Per C. C. Agar 37°.	B. Coli Presumptive 1 C. C. Sample.	Source of Sample.
1	9-17-14	2,200	—	From raw water pump.
2	9-17-14	1,900	—	Settled water, top of filter No. 1.
3	9-17-14	80	—	Filter No. 4, effluent.
4	9-17-14	40	—	Filter No. 3, effluent.
5	9-17-14	30	—	Filtered water as it goes into mains.
6	9-17-14	24	—	S. Deutshe Apothecary, Shelby and 2nd streets.
7	9-18-14	2,100	—	From raw water pump.
8	9-18-14	1,500	—	Settled water, top of filter No. 1.
9	9-18-14	80	—	Filter No. 3, effluent.
10	9-18-14	60	—	Filter No. 4, effluent.
11	9-18-14	25	—	Filtered water as it goes into mains.
12	9-22-14	2,000	—	From raw water pump.
13	9-22-14	1,700	—	Settled water from top of filter No. 1.
14	9-22-14	8	—	Filter No. 3, effluent.
15	9-22-14	4	—	Filter No. 4, effluent.
16	9-22-14	6	—	Filtered water as it goes into mains.
17	9-23-14	1,800	—	From raw water pump.
18	9-23-14	1,600	—	Settled water, top of filter No. 1.
19	9-23-14	10	—	Filter No. 3, effluent.
20	9-23-14	4	—	Filter No. 4, effluent.
21	9-23-14	6	—	Filtered water as it goes into mains.
22	9-23-14	6	—	Tap, D. & K. Pharmacy, 3rd and Main Streets.
23	9-23-14	19	—	Tap, office of water company, 2nd street.
24	9-26-14	1,700	—	From raw water pump.
25	9-26-14	1,500	—	Settled water, top of filter No. 1.
26	9-26-14	3	—	Filter No. 3, effluent.
27	9-26-14	6	—	Filter No. 4, effluent.
28	9-26-14	8	—	Filtered water as it goes into mains.

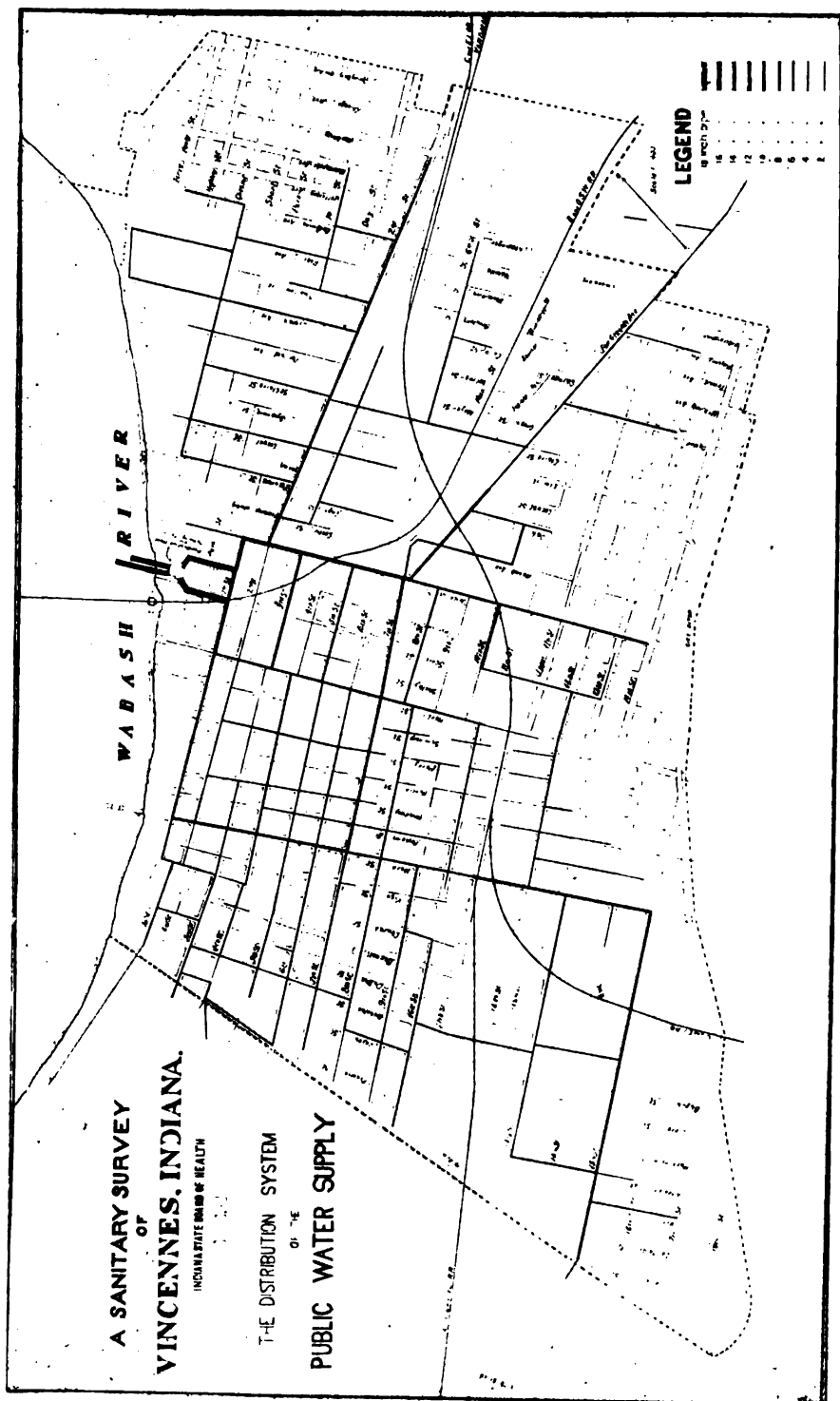
This examination, extending over a period of ten days, showed that the water was in very good condition. The bacterial removal showed the filters to be working at very high efficiency.

#### SANITARY CONDITION OF THE WABASH RIVER.

During the summer of 1912 this department conducted a very comprehensive survey of the Wabash River throughout its entire course. This survey considered the use of the river from a sanitary and economic point of view—as a means of water supply and sewage disposal. The summary of the investigation as set forth by Jay A. Craven, appearing in the 1912 report of the Indiana State Board of Health, describes the condition of this stream in a very comprehensive manner.

“Although from a physical standpoint, the river was found to be in good condition on this survey, the analyses showed that it was unfit in its raw state for drinking and domestic purposes, and that it would be necessary to filter the water to make it potable. The extra burden imposed upon a filtration plant by using the river for the disposal of sewage and manufacturing wastes in constantly increasing quantities, should be lessened as much as possible.





"The practice of the large manufacturing establishments, especially the strawboard works on the Wabash River, of pumping all wastes into the river, is one that should be stopped. Some other means must be found for the disposal of manufacturing wastes, especially when the quantities are so large that their existence in the river can be traced for several miles below the point of discharge. The harmful effects of the discharge of manufacturing wastes were noticed at Wabash, Indiana, where a large strawboard works is located.

"Some degree of purification of all manufacturing wastes and domestic sewage should be required. Partial purification, such as screening or passing the sewage and wastes through Imhoff tanks, will accomplish the desired results for some time to come. This is advisable in order to keep the river in as good a condition as at the present time. Such treatment as suggested would improve its present condition and would protect the river from further serious contamination in the future."

The population of cities on the Wabash River above Vincennes amounts to approximately 155,000, probably half of which are served by sanitary sewer systems which carry the waste into the river.

The following table, obtained from figures of the 1912 survey of the Wabash River, shows the distribution of sewage emptied into the river:

TABLE No. 2.  
Sewerage Data for Cities and Towns on the Wabash River Above Vincennes.

Distance in Miles Above Vincennes.	City or Town.	Estimated Popu- lation.	Miles of Sewers		Sewer Empties Into.
			Sanitary or Combined.	Storm.	
325	Bluffton.....	5,037	10.2	.....	Wabash river.
295	Huntington.....	10,350	16.4	.....	Little river.
274	Wabash.....	8,693	15.8	8	Wabash river.
258	Peru.....	11,154	17.1	.....	Wabash river.
238	Logansport.....	10,334	12.0	.....	Eel river.
213	Delphi.....	2,161	2.0	1-2	Deer Creek.
191	Lafayette.....	20,277	18.25	.....	Wabash river.
191	W. Lafayette.....	5,800	4.	.....	Wabash river.
164	Attica.....	3,368	1.5	.....	Wabash river.
161	Williamsport.....	1,243	1.5	.....	Fall Creek.
148	Covington.....	2,069	1.	.....	Wabash river.
133	Cavuga.....	732	.....	1-2	Big Vermillion river.
117	Clinton.....	6,580	1.25	.....	Wabash river.
89	Terre Haute.....	80,305	56.	.....	Wabash river.

Vincennes is located 325 miles below Bluffton at a distance of 89 miles below Terre Haute, the nearest town above emptying any

considerable amount of sewage into the Wabash. The Wabash River below Terre Haute is decidedly sluggish, affording excellent opportunity for purification by precipitation of the solids and oxidation of organic material by aeration.

The Wabash is by no means a pure stream at Vincennes. It is, however, in such a fair state of purity that filtration easily makes it a potable supply, and no doubt should exist in choosing between the present purified city supply and water from one of the surface wells which may receive drainage from the outhouse or cesspool which in practically every case accompanies it.

#### WATER SUPPLY FROM PRIVATE WELLS.

There are within the limits of the city of Vincennes 3,989 residences. This figure does not include hotels and the rooms above the stores. A flat or an apartment house, without regard to the number of families living there is considered as only one residence. The population of Vincennes is approximately 17,000 or 4.25 persons in each home. This figure is very probably slightly low owing to the fact that vacant houses were included in making up the total number of residences.

Three thousand wells, deep and shallow, are within the boundary of the city, and approximately this number of families depend at least a portion of the year upon water from this source as their supply for drinking water. In many cases more than one family uses one well for their water supply, and, of course, many wells existed which were not used as a drinking supply.

Fully ninety per cent. of these were driven wells, constructed by pounding a pipe into the gravel stratum until a water-bearing material was reached and by placing a pump on the upper end. The average shallow well was about thirty feet in depth. This method of well construction, on account of its cheapness and ease with which water was obtained, has met with great favor at Vincennes. It was in only a few sections that water could not be obtained at this depth. Occasionally however, a "stool" of clay would extend from the surface down to the bedrock. In the region near the fair ground, where a muck formation existed, wells frequently were dry during periods of continued drought.

Since, in most cases, the surface soil was of the same sandy and gravelly character as the deeper strata, unusual care should have been taken to protect the ground immediately surrounding the well, from filth which might be carried by the surface water which grad-

ually seeped through the soil to the depth of the water in the well. This, however, was not usually done. In most cases the well curb was on the same level as the surrounding ground and in practically all cases the waste water fell into a well pit beneath the loose board platform. Any water falling into this pit was eventually pumped up through the well. In many cases chickens were permitted in the same yard as the well, and in some cases their "droppings" were allowed to fall on the well platform.

In a few instances open dug wells still existed. Some of the "old oaken bucket" types were still used for a water supply.

The accompanying table will give an idea as to the distribution of the wells and their character, among the four sections into which the city was divided. Map No. 3 shows the geographical location of the contaminated wells.

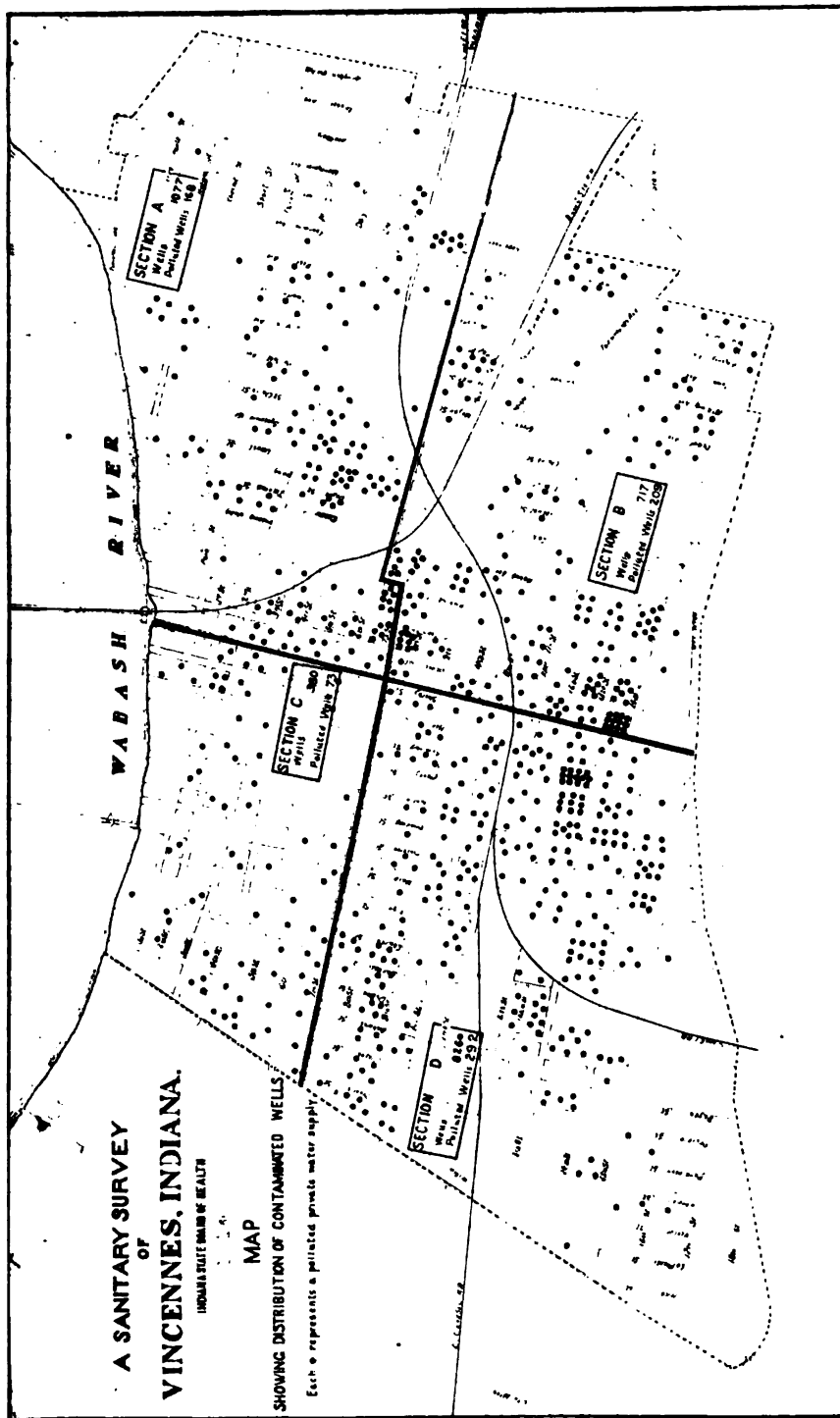
TABLE No. 3.  
Summary of Sanitary Inspections.

Section.	Residences.	Privies.	Cess-pools.	Total Wells.	Good Wells.	Bad Wells.	Per Cent. Bad.
A.	1,324	1,175	71	1,077	909	168	15
B.	909	824	53	717	508	209	29
C.	664	335	41	390	307	73	19
D.	1,092	895	22	826	534	292	34
Total	3,989	3,229	187	3,000	2,258	742	24.7

Section "D" included a large area lying east of Eleventh street, which is of very flat topography. The northern half of this area is thickly populated and the surface drainage is very bad. During time of high water the streets are flooded by overflow from the city ditch. Aside from the evidence of surface pollution by sewage many samples of water from this section had such a high iron content that they were unsatisfactory for domestic uses.

#### THE CHEMICAL COMPOSITION OF THE WELL WATERS.

It may be safely inferred that an isolated well which from a sanitary survey of the surroundings and a chemical and bacterial examination of the water shows no evidence of contamination, is in very near its original state of purity. Few such wells were found in Vincennes. In some cases, however, in the sections of the city settled within the last few years, and even at this time very sparsely populated, were to be found wells whose composition approached the primeval purity. Such wells had a chlorine content of one or



less part per 100,000 and the nitrites and nitrates were so low that they could not be read on the standards usually employed for this work.

The chlorine content of the wells examined varies from .5 to 40 parts per 100,00. The average chlorine in the thickly settled parts of the city varied from 4 to 7 parts per 100,000. Occasionally an abnormal figure was found; in most cases, such figures were accounted for by some closeby cesspool or a drain where the ice cream cans were dumped.

The nitrate content which is usually regarded as evidence of pollution by sewage which has been oxidized by continued exposure to the soil and air varied from 0 to 3 parts per 100,000, the higher figures appearing in the older and more thickly populated portions of the city.

The presence of nitrites in water indicates very recent sewage pollution. In certain cases extremely high factors were found in the Vincennes waters. They could be, in most cases, traced directly to the source of contamination.

The waters in the region of South Seventh street were evidently drawn from a stratum made up of a very fine sand, as shown by the fact that in nearly all cases the samples from this section contained a sediment of fine black sand.

#### BACTERIAL EXAMINATION OF WATERS.

In carrying on the bacterial examinations of the water plantings were made on nutrient agar for total counts at 37° C. and on lactose broth for the presumptive *B. coli* test. In most cases where the pollution of a well was the result of rather fresh sewage the results of the bacterial examination agreed with the chemical analysis. The nitrite and bacterial content went hand in hand.

In our report, these wells are divided into two classes—polluted and satisfactory. Whenever a well showed by chemical examination that it was receiving a considerable amount of pollution—indicated by an abnormal nitrate, nitrite and chlorine factors, or that it was contaminated with sewage organisms, together with unfavorable surroundings—the well was classed as polluted. Of the total number examined, 722 wells were deemed to be contaminated. The location of these polluted private water supplies is shown on Map No. 3. They are located in every part of the city, with the smallest per cent. near the borders where the population is not so congested.

A report as to the condition of every well was made to the city Board of Health. This Board took the proper steps to see that these spreaders and carriers of disease might no longer endanger the health of the citizens and prosperity of the city.

Appended to this report will be found Table No. 4 showing the condition of every well in the city of Vincennes.

Of the homes of Vincennes having a well in the back yard, probably 95 per cent. have a privy or cesspool which in all cases stands as a menace to the water supply. It is inconceivable that people can expect to draw good, pure, wholesome water from a hole in a sandy stratum when a pile of filth lies perhaps forty feet away and twenty feet above the end of the pipe through which the water is drawn. The subsoil is such a formation that any water falling into it or any leachings from this pile of filth rapidly pass down to the constant water level. And with the pump constantly drawing from this supply of water, it can not be long until the leaching from the manure pile or other filth reaches the well.

There can be determined no set or fixed formula whereby one can tell how close a privy or cesspool can be located to a well and yet not contaminate it. Much depends upon the exact soil formation, the size of the grains of sand or gravel, the height of the ground water level, the ability of the soil bacteria to remove or render innocuous the pathogenic organisms and the toxic elements of the sewage.

A fine sand, such as Vincennes is built upon, undoubtedly serves in exactly the same capacity as a slow sand filtration plant. The bacteria are to a certain extent strained out and many of the organic materials removed by biologic action. If the sand is fine this work is done much more efficiently than in case it is coarse gravel. If the ground water level is low any contaminating liquid would reach the well much sooner than if this level were many feet above the intake pipe of the pump.

Time is also a very important factor as is the volume of the polluting element. A large amount of filth may be taken care of quite satisfactorily for a short time or a small amount for a long time, but eventually it may break past the barriers of purification and reach the drinking water supply.

In Vincennes an ordinance prevails which forbids the construction of a privy vault closer than forty feet to a well. Very few cases were found where the outbuildings violated this minimum distance. Many wells were found to be of good character which

had a privy at this short distance, but even under the exceedingly favorable conditions which exist at Vincennes, it must be said that a drink from such a well is attended with more or less hazard.

The influence of the cesspool is much more widely felt. A cesspool as it is built at Vincennes, consists of a hole in the ground, walled with brick or concrete, into which the household wastes are run. The bottom of this dry well, as it is sometimes called, is purposely left non-watertight, the attitude being that if the liquids leak out into the soil, the owner does not have to haul the refuse away. As a result of this method of construction the underground water level in the immediate vicinity of the cesspool is slightly higher than that of the surrounding territory. Again, at any point where a well is located and water drawn from it, the water level will be slightly lowered. As a result the water flows from the higher level of the cesspool to the lower level of the well, and contamination is inevitable. Instances were found in Vincennes where a leaching cesspool of this sort contaminated all the wells of the block in which it was situated. In some instances, nearby wells were salty to the taste as a result of household and kitchen wastes draining into the cesspool.

Some theorists in sewage purification advocate that it is possible to purify sewage until the product is suitable for drinking water. This may be possible under ideal conditions which are under the perfect control of a chemist and bacteriologist; however, it does not apply to the natural purification of sewage that takes place in the ground beneath the privies and cesspools of Vincennes, Indiana. And such a close connection between the sewage disposal system and the water supply should not be tolerated.

#### SANITARY INSPECTIONS.

In the sanitary inspections which were made at every residence, the point of most vital concern was to determine the relation between the sewage and garbage wastes and the water supply. Matters such as the disposal of dish-waters and garbage, and the general cleanliness of the back yard, all in a direct or indirect way affect not only the health of the family living in the home, but also that of the neighbors. Exclusive of the water supply, flies are probably the most active agents for transmitting typhoid fever, and other intestinal diseases—especially summer complaint among children. A pile of garbage or manure, or a back yard made filthy by dish-water and scraps from the kitchen afford an excellent breed-



ing place for flies which later carry filth and disease germs from privy to dining-room or from the sick room to the baby's cradle.

An arbitrary classification of privies was made by the inspector, following the general method used by the United States Public Health Service in its typhoid investigations. The classification is as follows:

Class A.—A privy with water-tight vault, thoroughly closed, and screened against flies.

Class B.—Water-tight vault and closed, openings not screened.

Class C.—Planked vault, closed rear but not water-tight.

Class D.—No vault, but closed against chickens and small animals.

Class E.—No vault, rear open, accessible to animals and chickens.

Obviously, some question might arise in regard to which class an outhouse should be placed. It is easy to see how it would be impossible to determine whether or not the vault had a water-tight bottom. As a matter of fact, most of them were not water-tight, the owner depending on the absorption by the soil to remove at least the liquid waste.

Again in some cases privies were found where vaults were overflowing, with the rear of the building entirely rotted away or broken through. Such an outhouse was placed in Class "E" for the obvious reason that it would be just as great a menace to public health as it would if constructed without a vault.

All outhouses which were of class "E" construction or were for any other reason, on account of the overflowing vaults or excessive odor, deemed to be an unusual nuisance to public health were reported to the secretary of the city Board of Health. This officer issued orders, enforced by the police department, abating the nuisance. In all 611 such reports were issued, a list of which is appended to this paper in Table No. 5.

In a few cases, in spite of an ordinance to the contrary pigpens were found in the city limits. All persons holding such animals were warned to remove them immediately from the city.

There are in the city of Vincennes 3,229 privies, practically every one of which is a menace to the health of the city. Of the entire number inspected only one was found which could be placed in Class "A". All of the remainder were accessible to germ and filth carrying flies and many served as rat harbors. A very large proportion contaminated the ground in the immediate vicinity by

# A SANITARY SURVEY OF VINCENNES, INDIANA.

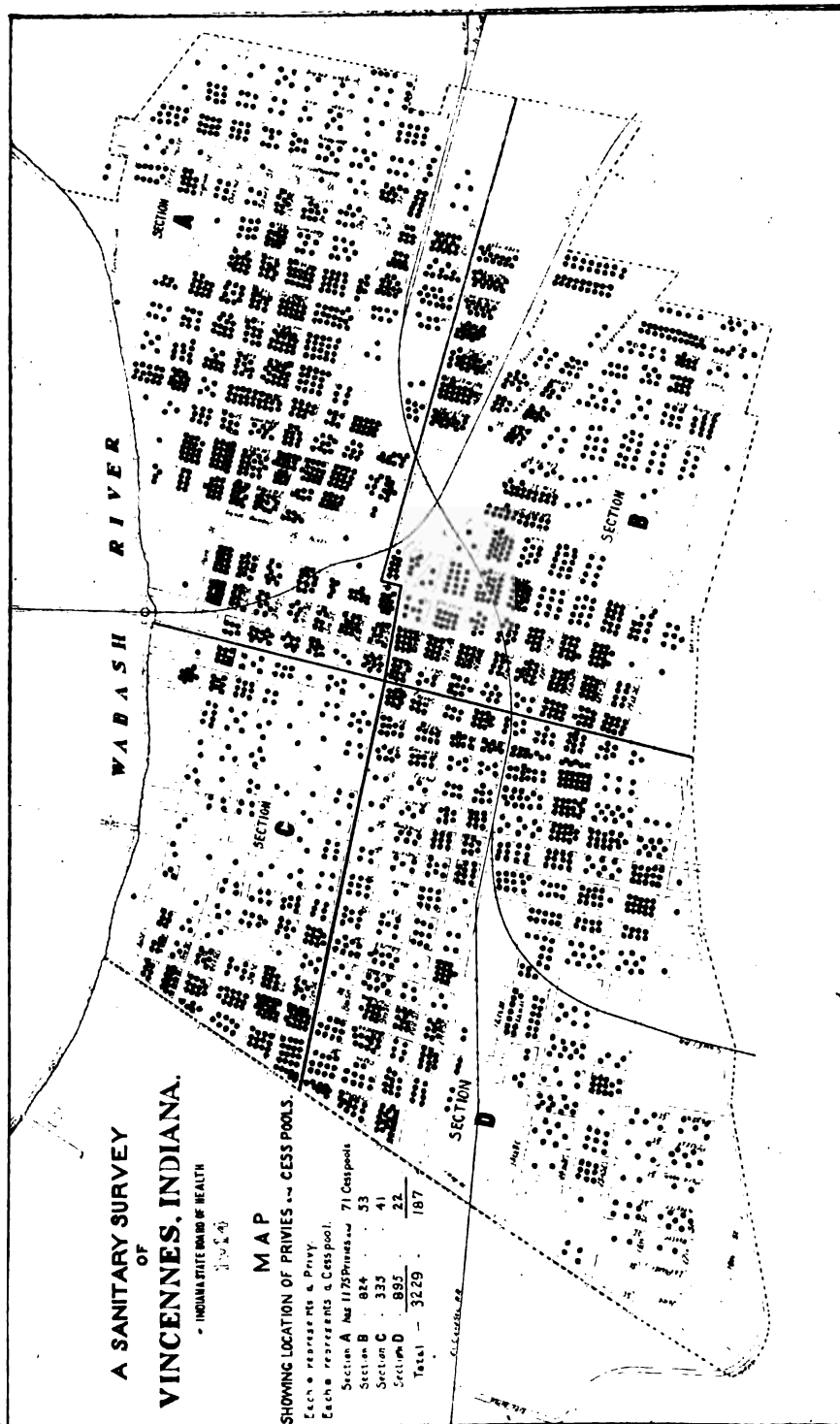
INDIANA STATE BOARD OF HEALTH  
1915

SHOWING LOCATION OF PRIVIES AND CESS POOLS.

MAP

Each dot represents a Privy.  
Each cross represents a Cess pool.

Section A	1175 Privies and	71 Cesspools
Section B	824	53
Section C	335	41
Section D	895	22
Total	3229	187



the leaching of water from the vaults and many undoubtedly drained into the wells.

To this number should be added 187 cesspools which from the well contamination point of view are worse than the privy. The distribution of these unsanitary devices is shown in Table No. 3 and on Map No. 4.

While it is not directly a matter of sanitation, yet a fact very worthy of mention is the thrift and enterprise shown by some of the foreign families in the south portion of the city. Many of the rear yards in this section of the city were cultivated quite extensively and not only furnished a means of added income for family, but also served as an incentive toward keeping the lot free from rubbish and filth. Frequently, their vegetable gardens were bordered with flowers and foliage plants which added beauty to the economic aspect.

#### THE VINCENNES SEWER SYSTEMS.

On account of the unusually flat topography of the city of Vincennes, a system of sewerage could be constructed only at a relatively high cost. For the same reason, lacking proper surface drainage, an underground system for carrying away surface water is all the more necessary.

#### THE CITY DITCH.

The first attempt to improve the drainage condition of the city was made in the year 1845, by the construction of the so-called "city ditch". The city ditch was a single open canal which drained the lowlands and swamps east of the city. As much of the surface land of the city slopes to the east, it indirectly bettered the drainage conditions in the city. This ditch had a very small flow of water except during the rainy season, and during the dry summer months became stagnant pools. During later years several private drains were constructed which discharged into the city ditch. These drains carried an amount of filth, which during dry seasons decomposed and gave off very disagreeable odors. With the construction of the sanitary sewer, practically all of these drains were connected with this system and the objectionable odors were largely removed. The city ditch has, however, continued to be an objection on account of its being such an excellent breeding place for mosquitoes. In July an inspection was made of this ditch

off  
or



at its mouth. The water was literally swarming with the larvæ of the mosquitoes. The superintendent of sewers was advised to empty crude oil into the ditch at its upper end. This he did with very excellent results. With the recent construction of the storm water sewerage system, the ditch is made to receive the surface water of practically the entire city.

During the time of high water in the Wabash River the water backs up into this ditch and overflows a large section of land near the city.

#### THE STORM WATER SEWER SYSTEM.

During the summer of 1914 a storm water sewer system was constructed. This system has two main outfalls, one, sixty inches, discharging into the city ditch at Main street, the other, a forty-eight-inch, emptying into the river at the foot of Buntin street. A short sewer with a thirty-six-inch outfall empties into the Wabash at the foot of Shelby street. In addition to this the city has taken over a private sewer known as the Norton or the Perry street sewer, operating as a sanitary sewer. An effort is being made to compel all persons connected with this sewer to join the new city sanitary system. At the time the sewer was last inspected, October, 1914, there remained apparently some sanitary connections to this Perry street sewer.

The main system is about eighty-four blocks in length and ranges in size from sixty inches to the outfall emptying into the city ditch to fifteen inches for the laterals. Each of the outfalls has check valves to prevent the streets being flooded during times when the Wabash River is at a high stage.

#### THE SANITARY SEWERAGE SYSTEM.

There have been several short private sanitary sewer lines constructed in Vincennes. One of these, known as the Ebner sewer, empties at the foot of Busseron street. Another is the Norton sewer which empties into the Wabash at the foot of Perry street. The Ebner sewer continues to be used as a sanitary sewer. The Perry sewer is now being used as part of the city storm sewer.

In 1910 at the suggestion of the Indiana State Board of Health, Vincennes sought to have a sewerage system constructed. It was found that the cost of construction would be somewhat higher than in most other cities of the same size, due largely to the very level surface of the ground and the slight elevation above the river.

The final construction was undertaken after the formation of a company known as the Vincennes Sewer Association. This private corporation entered into a contract with the city of Vincennes, whereby the company constructed the sewers for which the city pays the annual rental, and eventually may purchase it at a price which decreases each year according to a schedule stated in the franchise.

The system consists of forty miles of eight- to thirty-inch sewers, one of the most complete systems in the State of Indiana. On account of the slight fall which it was possible to give the sewers, it was necessary to construct a pumping station and carry the sewage to this one point in order that it may be lifted up to the level of the river during the times of high waters on the Wabash.

The system was constructed with the intention of being able, by proper line extensions, to take care of the sewage of a population of 30,000. The average volume of house sewage was estimated at 100 gallons per capita and leakage into the line at the rate of two gallons per linear foot. The flat, level topography necessitated rather level grades and large lines. Slopes using velocities of two cubic feet per second when sewer was flowing half full were used.

The main sewer, 30 inches in diameter, runs from the pumping station, which is located 1,700 feet below the city, through Willow street, Thirteenth street to Main street where it changes to a 27-inch. The main line takes a northwesterly direction, draining all of that portion of the city. The second 24-inch interceptor follows the river bank up First street, draining Perry, First, Shelby, Park, Hickman and Chestnut streets. By means of this second interceptor, the necessary depth of the sewer is lessened.

Automatic flush tanks have been provided at the upper end of all sewers to enable the lines to be kept clean. On account of the very low surface level ventilation of the sewers by perforated man-holes has not been provided. Instead ventilation is provided through all soil pipes at the houses.

Since each household connection is "trapped" no soil pipe traps have been installed. The necessary low level of the system demanded a pumping station for lifting the sewage to the level of the river during the time of high water. A station is erected at the outlet of the system. The pumping machinery consists of electric centrifugal pumps. In order to reduce the nuisance of throwing the raw sewage into the Wabash River, it is screened by passing through two sets of bar screens having openings 7-8 and 7-16 inch







to remove the coarser solids. The screenings are burned in an incinerator. To provide chemical treatment a detention period of ten to fifteen minutes is provided for. This gives time for hypochlorite treatment should such be required at any time. It is proposed to add chloride of lime at the rate of 75 to 125 pounds per million gallons to the screened sewage, the amount depending upon the character of the sewage. At the present time no chemical disinfection is made. This pumping and treating plant may at some time become a part of a sewage purification plant should Federal or State law require further purification of the sewage.

The sewage passes into the river through a 24-inch cast iron pipe extending into the river about 300 feet. In the last 120 feet, which lie in the center of the stream, are located five double outlets six inches in diameter and about 30 feet apart. This dispersion of the sewage in the current of the stream reduces the liability of a nuisance to a minimum.

The dry weather flow of the Wabash River at Vincennes is approximately 2,000 cubic feet per second. This affords a dilution of practically 11 cubic feet per 1,000 population which is far in excess of the ratio legally established in the case of the Chicago drainage canal, viz., 3 1-3 cubic feet per second per 1,000 population.

## DISPOSAL OF GARBAGE, NIGHT SOIL AND OTHER WASTES.

### GARBAGE.

Vincennes has a city ordinance which declares every household shall provide a water-tight garbage can properly covered and that refuse placed therein shall be collected twice per week during the summer months, and once per week during the winter. This same ordinance makes provisions for a contract with firms for collecting garbage in properly equipped wagons and disposal of it in a sanitary manner.

Such a contract was entered into by a firm for a number of years, the garbage being carried to a point east of the city where it was burned in a plant erected there. In the summer of 1913 this firm, although this contract had not expired, ceased to operate because of their failure to make a profit on the investment. During 1914, in order to provide some means of waste disposal, the city department ran a system of wagons which collected waste and carried it to a low ground east of the city where it was dumped.

This collection was decidedly irregular and much complained of by the public. It was noted, however, that there was a decided laxity on the part of the householders to provide proper garbage cans. Quite often the refuse was piled at the back end of the lots from where it was expected the city wagons would collect. The wagons used by the city were by no means water-tight. Frequently, as a wagon went down the street it would leave a trail of lost garbage behind it. However, it must be admitted that the city was doing the best it could under the conditions, it being unwise to invest a large amount of money in equipment when it did not know how soon the old contract would be renewed. It has since been decided, however, that the city of Vincennes will take over the collection and disposal system and continue to operate the plant. Doubtless the equipment will be repaired and the waste disposed of in a sanitary manner.

#### NIGHT SOIL.

No system of licensing of persons who collect and bury night soil is provided. An ordinance provides that the cleaning of vaults shall be carried on between the hours of 10 p. m. and 5 a. m. and that it shall be buried only at points designated by the City Board of Health. In practice the waste is taken to a point north of the city. This system cannot be objected to except for the fact that the vaults are not cleaned frequently enough.

The wastes, such as tin cans, ashes, etc., are hauled by the city to the low land east of the city where they are used for filling.

#### TYPHOID FEVER.

The mortality statistics from the Department of Vital Statistics of the Indiana State Board of Health give the following figures (cases and deaths) and rates for the city of Vincennes:

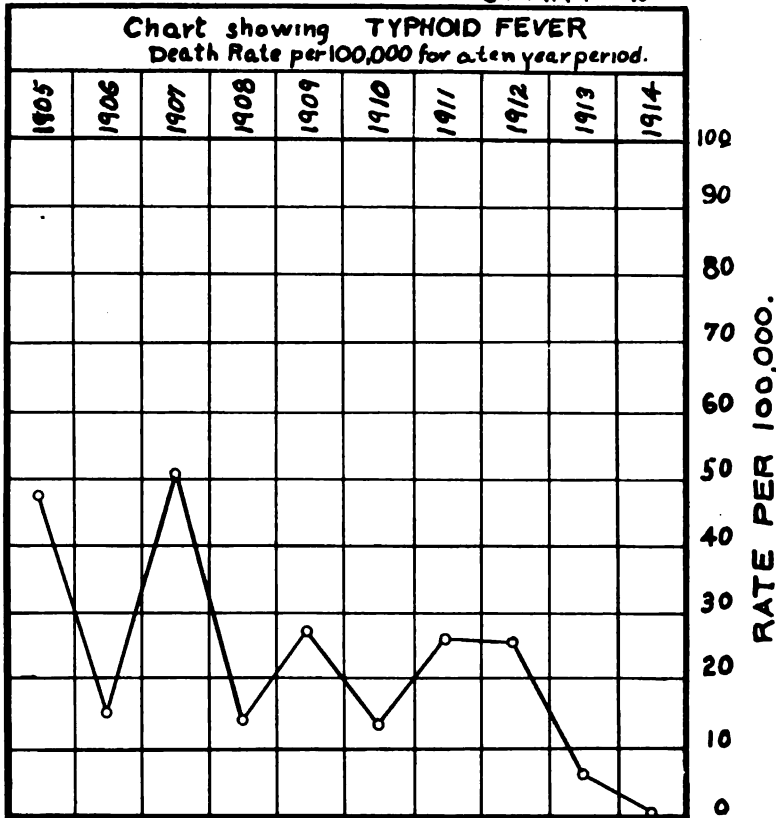
TYPHOID FEVER IN VINCENNES, JANUARY 1, 1905, TO DECEMBER 1, 1914.

YEARS.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	Average Rate for Ten Years.
Cases reported.....	8	6	25	2	19	12	13	11	3	3	
Deaths.....	8	2	8	1	4	2	4	4	1	0	
Death rate per 100,000.....	47.6	15.2	51.1	14.2	27.5	13.4	26.8	26.0	6.5	0.0	22.8

The average typhoid death rate for the city is 22.8 per 100,000, which is practically that of the entire State of Indiana. This is

decidedly higher than it should be for a city with modern sanitary conveniences at its disposal. No doubt, however, this high figure is largely due to the numerous outhouses unprotected from flies, and to the many wells which are reached by the seepage from cess-pools and out-door privies.

CHART 2



VINCENNES, INDIANA.

Typhoid fever has existed only in the endemic form in recent years at Vincennes and doubtless some of the cases and deaths here reported have been brought in from outside sources. Nevertheless, the figure is entirely too high and should be lowered by using a pure water supply and a sanitary means of sewage disposal.

## SUMMARY.

Vincennes is not an abnormally unhealthy city. This fact, however, is more by chance than otherwise. The bed of sand and gravel on which it is built originally furnished a very excellent water supply and it now serves as a means of sewage disposal. But it should not be used for both. The altered composition of the underground water shows that the purifying elements are only partially converting the nitrogenous materials into harmless nitrates and in many cases are even permitting sewage bacteria to pass through.

Without a doubt many of the wells classed as polluted have never been the cause of serious illness, but the conditions existing here show that at almost any time the purifying process may be carried out even less efficiently by the soil and the organisms and sewage poisons make their way into the wells.

The supply of water furnished by the public system is of good quality. Many of the wells now in use furnished a satisfactory supply but a vast number are receiving pollution from privies and cesspools and many others are of an exceedingly doubtful character. The proper and only solution of this question is prompt and vigorous action by the Health Department to enact and enforce an ordinance closing polluted private water supplies.

The out-door privy and cesspool is a public nuisance. It is a breeding place for flies and a menace to the wells of the neighborhood. Aside from the water supply point of view the out-of-door privy should be done away with for another very good reason. Any section of a city thickly populated by such outhouses always has a distinctive odor. The fly nuisance in such sections is unusually objectionable and the spread of typhoid fever and other enteric diseases likely to take place. Compulsory connection with the sewers in these districts should be enforced. Such sewer connections will be attended by increased property valuation.

With a potable water supply, with privies and cesspools done away with by connection with the sewers, with the filth, garbage and rubbish cleaned from the back yards and alleys, Vincennes would make vast strides toward being one of the cleanest and healthiest cities of the State of Indiana.

TABLE No. 4.

Condition of Private Water Supply of Vincennes, Indiana.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1	Carrie Brown	339 Portland	Same	Bad.
2	Chas. A. Wheeler	317 W. Portland	Same	Bad.
3	W. O. Connor	311 W. Portland	Mr. Borden	Bad.
4	Wm. Kirk	303 W. Portland	Same	Bad.
5	C. R. Fisher	241 W. Portland	Same	Satisfactory.
6	E. Brewster	235 W. Portland	Same	Satisfactory.
7	John Fuller	223 W. Portland	Mary Wilson	Bad.
8	J. A. Spencer	207 W. Portland	J. C. Riddle	Bad.
9	W. A. Johnson	201 W. Portland	Same	Bad.
10		720 N. Chestnut		Satisfactory.
11	James Kerns	222 W. Lyndale		Satisfactory.
12	Mrs. Mary Doan	223 W. Lyndale		Satisfactory.
13		304 W. Lyndale		Satisfactory.
14	Geo. Goldring	309 W. Lyndale		Satisfactory.
15	Carl Thompson	1015 Taylor Ave.		Satisfactory.
16	G. C. Ryan	313 W. Lyndale		Satisfactory.
17	C. H. Ridgeley	317 W. Lyndale		Satisfactory.
18	Wm. Cohn	317 Back W. Lyndale		Satisfactory.
19	John Collier	339 W. Lyndale		Satisfactory.
20	J. R. Welch	Terre Haute Road		Satisfactory.
21	C. W. Hottle	121 W. Portland		Satisfactory.
22	J. Riddle	111 W. Portland		Satisfactory.
23	J. C. Steffy	107 W. Portland		Satisfactory.
24	J. A. Rogers	103 W. Portland		Satisfactory.
25	Ben Ruble	27 W. Portland	Same	Bad.
26	Leon Draper	23 W. Portland		Satisfactory.
27	K. O. Rich	19 W. Portland	Same	Bad.
28	F. Dotson	15 W. Portland		Satisfactory.
29	J. Nichols	9 W. Portland		Satisfactory.
30	R. Thacker	5 W. Portland		Satisfactory.
31	Ed. Crouse	2 E. Portland		Satisfactory.
32	Buck Grider	4 E. Portland		Satisfactory.
33	C. Grover	8 E. Portland		Satisfactory.
34	Will Eastridge	10 E. Portland		Satisfactory.
35	Tom Smith	16 E. Portland		Satisfactory.
36	S. Buhner	20 E. Portland		Satisfactory.
37	W. Heuener	24 E. Portland		Satisfactory.
38	S. Watson	26 E. Portland		Satisfactory.
39	E. B. Henry	36 E. Portland		Satisfactory.
40	W. Beaman	35 E. Lyndale		Satisfactory.
41	Clyde McGee	31 E. Lyndale		Satisfactory.
42	Geo. Huber	37 E. Lyndale		Satisfactory.
43	Orange Hull	23 E. Lyndale		Satisfactory.
44	S. R. Kasinger	19 E. Lyndale		Satisfactory.
45	Joe Goddard	15 E. Lyndale		Satisfactory.
46	C. Hodaff	9 E. Lyndale		Satisfactory.
47	A. Eitel	7 E. Lyndale		Satisfactory.
48	A. Farris	5 E. Lyndale		Satisfactory.
49	W. Attkinson	10 W. Portland		Satisfactory.
50	W. Clark	12 E. Lyndale		Satisfactory.
51	F. T. Hocker	126 E. Lyndale		Satisfactory.
52	A. Friedman	124 W. Lyndale		Satisfactory.
53	John Ballard	120 W. Lyndale		Satisfactory.
54	R. Van Vliet	116 W. Lyndale		Satisfactory.
55	N. J. Fogerty	112 W. Lyndale		Satisfactory.
56	W. E. Ballard	110 W. Lyndale		Satisfactory.
57	Mrs. E. Turpin	102 W. Lyndale		Satisfactory.
58	E. M. Miller	1720 N. Short St.		Satisfactory.
59	Ed. H. Oexman	W. Lyndale		Satisfactory.
60	James Shields	22 W. Lyndale		Satisfactory.
61	A. F. McFarland	20 W. Lyndale		Satisfactory.
62	Dr. S. L. Carson	104 E. Portland		Satisfactory.
63	J. M. Wampler	108 E. Portland		Satisfactory.
64	A. Miller	118 E. Portland		Satisfactory.
65	Mrs. M. L. Henry	128 E. Portland		Satisfactory.
66	Mrs. Henry Adams	130 E. Portland		Satisfactory.
67	W. M. Bockner	132 E. Portland		Satisfactory.
68	Mrs. McGowan	1708 N. Second		Satisfactory.
69	W. Wilkes	1724 N. Second		Satisfactory.
70	Cora A. Roach	139 E. Lyndale		Satisfactory.
71	J. T. Cato	133 E. Lyndale		Satisfactory.
72	C. Sauer	127 E. Lyndale		Satisfactory.
73	W. Edmunson	123 E. Lyndale		Satisfactory.
74	E. C. Guiler	119 E. Lyndale		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
75	E. J. Miller	111 E. Lyndale.		Satisfactory.
76	Mrs. Reel	109 E. Lyndale.		Satisfactory.
77	F. Miller	209 W. Lyndale.		Satisfactory.
78	G. Young	213 W. Lyndale.		Satisfactory.
79	E. Fry	215 W. Lyndale.		Satisfactory.
80	E. Boly	219 W. Lyndale.		Satisfactory.
81	Hillary Ash	239 W. Lyndale.		Satisfactory.
82	Mary Fellows	223 W. Lyndale.		Satisfactory.
83	L. B. Brown	123 W. Lyndale.		Satisfactory.
84	N. B. Stone	119 W. Lyndale.		Satisfactory.
85	C. W. Bell	115 W. Lyndale.		Satisfactory.
86	Ella Cochran	111 W. Lyndale.		Satisfactory.
87	Jess Bingham	21 W. Lyndale.		Satisfactory.
88	F. Heady	17 W. Lyndale.		Satisfactory.
89	B. M. Milam	15 W. Lyndale.		Satisfactory.
90	W. E. Midey	3 W. Lyndale.		Satisfactory.
91	J. Smith	4 E. Lyndale.		Satisfactory.
92	S. Milton	10 E. Lyndale.		Satisfactory.
93	Mrs. E. Ruth	16 E. Lyndale.		Satisfactory.
94	Mrs. F. Willman	20 E. Lyndale.		Satisfactory.
95	W. Prine	24 E. Lyndale.		Satisfactory.
96	W. F. Kercheval	34 E. Lyndale.		Satisfactory.
97	Charles Adams	36 E. Lyndale.		Satisfactory.
98	A. W. Schnuck	107 E. Lyndale.		Satisfactory.
99	J. J. Case	110 E. Lyndale.		Satisfactory.
100	E. M. Jenkins	114 E. Lyndale.		Satisfactory.
101	Geo. Sheldon	120 E. Lyndale.		Satisfactory.
102	Mrs. Horten	124 E. Lyndale.	Same	Bad.
103	Mrs. McCowen	128 E. Lyndale.	Same	Satisfactory.
104	— Wilson	134 E. Lyndale.		Satisfactory.
105	O. Steininger	1902 N. Second		Satisfactory.
106	Emma Levenson	1808 N. Second		Satisfactory.
107	Fred Long	1820 N. Second		Satisfactory.
108	J. K. Recker	153 E. Swartzel		Satisfactory.
109	P. Sweeney	135 E. Swartzel	Same	Bad.
110	Mrs. Hunter	133 E. Swartzel		Bad.
111	Margarete Milligan	127 E. Swartzel		Bad.
112	W. E. Cleveland	123 E. Swartzel		Bad.
113	Geo. Drain	119 E. Swartzel		Bad.
114		115 E. Swartzel		Bad.
115	Sam Tare	111 E. Swartzel		Bad.
116	E. Olds	35 E. Swartzel		Satisfactory.
117	N. Schuff	31 E. Swartzel		Satisfactory.
118	B. F. McCleave	27 E. Swartzel		Satisfactory.
119	W. Pranss	21 E. Swartzel		Satisfactory.
120	G. Shiffo	19 E. Swartzel		Satisfactory.
121	Mr. Bennet	17 E. Swartzel		Satisfactory.
122	L. Halbig	11 E. Swartzel		Satisfactory.
123	C. G. Rittenkamp	73 E. Swartzel		Satisfactory.
124	A. T. McCormick	2 W. Swartzel		Satisfactory.
125	Lewis Sayan	6 W. Swartzel		Satisfactory.
126	R. G. Kercheval	16 W. Swartzel		Satisfactory.
127	C. Wilkinson	18 W. Swartzel		Satisfactory.
128	H. Robt.	24 W. Swartzel		Satisfactory.
129	Crockel Bros	28 W. Swartzel		Satisfactory.
130	F. Luking	102 W. Swartzel		Satisfactory.
131	J. G. Williams	108 W. Swartzel		Satisfactory.
132	T. Carney	112 W. Swartzel		Satisfactory.
133	N. Upland	116 W. Swartzel		Satisfactory.
134	P. Sullivan	120 W. Swartzel		Satisfactory.
135	E. Boly	122 W. Swartzel		Satisfactory.
136	E. T. Jordan	121 W. Swartzel		Satisfactory.
137	Mrs. A. Wisc	119 W. Swartzel		Satisfactory.
138	E. A. Case	115 W. Swartzel		Satisfactory.
139	R. Jordan	113 W. Swartzel		Satisfactory.
140	F. Walter	109 W. Swartzel		Satisfactory.
141	Fred Dubois	101 W. Swartzel		Satisfactory.
142	Chas. D. Adams	27 W. Swartzel		Satisfactory.
143	Verner Crackel	1909 N. Short		Satisfactory.
144	T. Bishop	23 W. Swartzel		Satisfactory.
145	John Wolf	13 W. Swartzel		Satisfactory.
146	H. W. Hannum	11 W. Swartzel		Satisfactory.
147	H. Adams	1 W. Swartzel		Satisfactory.
148	B. Ritterskamp	2 E. Swartzel		Satisfactory.
149	F. Connett	8 E. Swartzel		Satisfactory.
150	A. L. Base	12 E. Swartzel	Same	Bad.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
151	J. H. Taylor	16 E. Swartzel		Satisfactory.
152	Mrs. J. Henderson	20 E. Swartzel		Satisfactory.
153	Geo. Critchlow	22 E. Swartzel		Satisfactory.
154	W. H. Teusches	28 E. Swartzel		Satisfactory.
155	Mrs. H. Robinson	72 E. Swartzel	Mr. Borden	Bad.
156	G. B. Burnside	36 E. Swartzel		Satisfactory.
157	Mrs. Bauer	102 E. Swartzel		Satisfactory.
158	— McCormick	106 E. Swartzel		Satisfactory.
159	Geo. Bell	110 E. Swartzel		Satisfactory.
160	A. Cannon	114 E. Swartzel	Mr. Rildelsheimer	Bad.
161	Sherman Oaks	120 E. Swartzel		Satisfactory.
162	F. Ashmann	122 E. Swartzel		Satisfactory.
163	E. East	126 E. Swartzel		Satisfactory.
164	L. Ofell	132 E. Swartzel		Satisfactory.
165	A. Bauer	136 E. Swartzel	Same	Bad.
166	A. Bohnert	154 E. Swartzel		Satisfactory.
167	R. S. Johnson	156 E. Swartzel	Same	Bad.
168	J. W. Opell	1910 N. Second		Satisfactory.
169	G. Smith	1924 N. Second		Satisfactory.
170	J. Eddanam	151 E. Reel		Satisfactory.
171	D. H. Brown	130 W. Reel	Mr. Borden	Bad.
172	H. C. Kassens	126 E. Reel		Satisfactory.
173	C. Haaff	122 W. Reel		Satisfactory.
174	J. H. Bensen	114 W. Reel		Satisfactory.
175	J. W. Highsmith	104 W. Reel		Satisfactory.
176	J. Fowler	22 W. Reel		Satisfactory.
177	T. J. Edwards	16 W. Reel		Satisfactory.
178	E. Wilbur	12 W. Reel		Satisfactory.
179	L. Von Behren	6 W. Reel		Satisfactory.
180	H. Guesse	1918 N. Short	Mr. Goeff	Bad.
181	Mrs. Goeff	2 W. Reel		Satisfactory.
182		1823 Park		Bad.
183	F. De Hut	7 E. Reel		Satisfactory.
184	J. Farrell	9 E. Reel		Satisfactory.
185	W. H. Redwine	15 E. Reel		Satisfactory.
186	S. H. Fairner	19 E. Reel		Satisfactory.
187	O. Pyles	23 E. Reel		Satisfactory.
188	G. Latschaw	29 E. Reel		Satisfactory.
189	S. Van Hoy	31 E. Reel		Satisfactory.
190	W. Doffron	35 E. Reel		Satisfactory.
191	J. Eastridge	103 E. Reel		Satisfactory.
192	F. Shuff	107 E. Reel		Satisfactory.
193	T. Thompson	111 E. Reel		Satisfactory.
194	B. Myres	115 E. Reel		Satisfactory.
195	T. Thompson	111 E. Reel		Satisfactory.
196		123 E. Reel		Satisfactory.
197	Mr. Cletcherfield	127 E. Reel		Satisfactory.
198	E. C. Gilmore	131 E. Reel		Satisfactory.
199	T. Kitchell	135 E. Reel		Satisfactory.
200	Father Becker, Sacred Heart School	Corner Reel and Second		Satisfactory.
201	Ed. Boswell	127 W. Reel		Satisfactory.
202	John Landis	109 W. Reel		Satisfactory.
203	Paul Wells	115 W. Reel		Satisfactory.
204	H. Shackelford	114 W. Reel		Satisfactory.
205	C. Smith	103 W. Reel		Satisfactory.
206	W. H. Robb	23 W. Reel		Satisfactory.
207	H. Foreman	19 W. Reel		Satisfactory.
208	J. Rhule	13 W. Reel		Satisfactory.
209	W. Sharp	11 W. Reel		Satisfactory.
210	Ed. Nash	5 W. Reel		Satisfactory.
211	B. Alexander	3 W. Reel		Satisfactory.
212	J. Raney	20 E. Reel		Satisfactory.
213	G. Oakes	108 E. Reel		Satisfactory.
214	W. Sage	410 E. Reel		Satisfactory.
215	G. Nause	118 E. Reel		Satisfactory.
216	Thomas Levell	122 E. Reel		Satisfactory.
217	F. Treimen	132 E. Reel		Satisfactory.
218	H. E. McCoy	125 E. Eberwine		Satisfactory.
219	C. Booker	111 E. Eberwine		Satisfactory.
220	John Unsleet	105 E. Eberwine		Satisfactory.
221	F. Shuel	103 E. Eberwine		Satisfactory.
222	H. Luking	35 E. Eberwine		Satisfactory.
223	R. Dotson	27 E. Eberwine		Satisfactory.
224	J. Gehal	23 E. Eberwine		Satisfactory.
225	Mr. Anderson	19 E. Eberwine		Satisfactory.



TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
226	Mike Derri.	15 E. Eberwine.		Satisfactory.
227	Mrs. L. Hobly.	13 E. Eberwine.	Same.	Bad.
228	H. Oliphant.	3 E. Eberwine.		Satisfactory.
229	L. Schnuck.	2 W. Eberwine.		Satisfactory.
230	G. Brookman.	6 W. Eberwine.		Satisfactory.
231	Martin Goldman.	437 W. Eberwine.		Satisfactory.
232	W. F. Decker.	431 W. Eberwine.		Satisfactory.
233	Willie Cargal.	435 W. Eberwine.		Satisfactory.
234	F. E. Hart.	327 W. Eberwine.		Satisfactory.
235	John Gott.	329 W. Eberwine.		Satisfactory.
236	Mrs. Pingrey.	321 W. Eberwine.		Satisfactory.
237	W. Rodarmel.	319 W. Eberwine.		Satisfactory.
238	J. F. Dickson.	317 W. Eberwine.		Satisfactory.
239		313 W. Eberwine.	Mr. Borden.	Satisfactory.
240	L. Hedrick.	306 W. Eberwine.		Satisfactory.
241	B. Wilkes.	303 W. Eberwine.		Satisfactory.
242	Mary Blair.	215 W. Eberwine.		Satisfactory.
243	E. Reed.	211 W. Eberwine.		Satisfactory.
244	W. H. Williams.	203 W. Eberwine.		Satisfactory.
245	V. Cooper.	127 W. Eberwine.		Satisfactory.
246	G. Timmons.	123 W. Eberwine.		Satisfactory.
247	J. W. Merrill.	105 W. Eberwine.		Satisfactory.
248	J. Ach.	112 W. Eberwine.		Satisfactory.
249	W. Kitchel.	108 W. Eberwine.		Satisfactory.
250	J. Dover.	104 W. Eberwine.		Satisfactory.
251	Ben Hubers.	28 W. Eberwine.		Satisfactory.
252	J. C. Friend.	26 W. Eberwine.		Satisfactory.
253	C. Laven.	24 W. Eberwine.		Satisfactory.
254	B. Niehaus.	16 W. Eberwine.		Satisfactory.
255	M. Rubel.	10 W. Eberwine.		Satisfactory.
256	J. P. Edwards.	1 W. Eberwine.		Satisfactory.
257	W. Bolard.	5 W. Eberwine.		Satisfactory.
258	J. H. McKean.	11 W. Eberwine.		Satisfactory.
259	G. Goodwin.	27 W. Eberwine.		Satisfactory.
260	E. Martin.	123 W. Jefferson.		Satisfactory.
261	Ray Rich.	440 W. Jefferson.		Satisfactory.
262	C. Orndorff.	438 W. Jefferson.		Satisfactory.
263	G. Goldring.	436 W. Jefferson.		Satisfactory.
264	C. Walton.	418 W. Jefferson.		Satisfactory.
265	J. Dotson.	417 W. Jefferson.		Satisfactory.
266	W. H. Brubeck.	411 W. Jefferson.		Satisfactory.
267	Joe Aitken.	407 W. Jefferson.		Satisfactory.
268	J. M. Walton.	408 W. Jefferson.		Satisfactory.
269	J. F. Tronein.	402 W. Jefferson.		Satisfactory.
270	John Uland.	340 W. Jefferson.		Satisfactory.
271	W. Benjamin.	333 W. Jefferson.	Martindale.	Bad.
272	C. Cooper.	330 W. Jefferson.		Satisfactory.
273	B. Uland.	322 W. Jefferson.		Satisfactory.
274	J. W. Compton.	238 W. Jefferson.		Satisfactory.
275	C. Compton.	232 W. Jefferson.		Satisfactory.
276	J. E. Milligan.	28 W. Jefferson.		Satisfactory.
277	H. Holt.	3 W. Jefferson.		Satisfactory.
278	A. B. Acre.	3 E. Jefferson.		Satisfactory.
279	C. Norris.	15 E. Jefferson.		Satisfactory.
280	G. W. Cooper.	27 E. Jefferson.		Satisfactory.
281	U. Grant Gilley.	29 E. Jefferson.		Satisfactory.
282	C. Gillespy.	21 E. Jefferson.		Satisfactory.
283	F. Scott.	115 E. Jefferson.		Satisfactory.
284	C. Hoke.	121 E. Jefferson.		Satisfactory.
285	L. Koke.	131 E. Jefferson.		Satisfactory.
286	J. Richardson.	110 E. Jefferson.		Satisfactory.
287	W. E. Levell.	104 E. Jefferson.		Satisfactory.
288	H. C. Levell.	102 E. Jefferson.	W. Levell.	Bad.
289	W. F. Rice.	32 E. Jefferson.		Satisfactory.
290	W. E. Smith.	202 W. Eberwine.		Satisfactory.
291	H. Linback.	439 W. Minneapolis.		Satisfactory.
292		435 W. Minneapolis.		Satisfactory.
293	R. Campbell.	433 W. Minneapolis.		Satisfactory.
294	B. Nash.	411 W. Minneapolis.		Satisfactory.
295	J. Midkiff.	407 W. Minneapolis.		Satisfactory.
296	Mrs. McDowell.	403 W. Minneapolis.		Satisfactory.
297	Mrs. E. Fitts.	337 W. Minneapolis.		Satisfactory.
298	Mrs. E. Mars.	321 W. Minneapolis.		Satisfactory.
299	J. Paris.	313 W. Minneapolis.		Satisfactory.
300	R. Ward.	311 W. Minneapolis.		Satisfactory.
301	C. Weld.	303 W. Minneapolis.		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
302	M. J. Percival	302 W. Minneapolis.		Satisfactory.
303	A. Smith	303 W. Minneapolis.		Satisfactory.
304	Miss Boner	213 W. Minneapolis.		Satisfactory.
305	J. W. Stafford	209 W. Minneapolis.		Satisfactory.
306	S. Foreman	119 W. Minneapolis.		Satisfactory.
307	C. H. Gibson	111 W. Minneapolis.		Satisfactory.
308	J. Potter	109 W. Minneapolis.		Satisfactory.
309	G. Reel	15 E. Minneapolis.		Satisfactory.
310	C. Hill	12 E. Minneapolis.		Satisfactory.
311	C. Lwwys	16 E. Minneapolis.		Satisfactory.
312	B. Smith	18 E. Minneapolis.		Satisfactory.
313	W. F. Messey	24 E. Minneapolis.		Satisfactory.
314		Cor. 1st and Minneapolis.		Satisfactory.
315		106 E. Minneapolis.		Satisfactory.
316	W. Thomas	132 E. Minneapolis.		Satisfactory.
317	R. Johnson	136 E. Minneapolis.		Satisfactory.
318	T. Simmons	2231 N. Day		Satisfactory.
319	H. Hoyce	2227 N. Day		Satisfactory.
320	C. Richardson	2221 N. Day		Satisfactory.
321	P. Savory	16 E. Eberwine.		Satisfactory.
322	F. M. Carmichael	20 E. Eberwine.		Satisfactory.
323	R. Smith	28 E. Eberwine.		Satisfactory.
324		36 W. Eberwine.		Satisfactory.
325	C. W. Anderson	116 E. Eberwine.		Satisfactory.
326	Mrs. W. T. Jones	120 E. Eberwine.		Satisfactory.
327	G. H. Bingblossom	125 E. Eberwine.		Satisfactory.
328	B. S. Foreman	126 E. Eberwine.		Satisfactory.
329	School No. 7	Cor. 2nd and Eberwine.		Satisfactory.
330	O. Goldman	152 E. Jefferson.		Satisfactory.
331	L. T. Hoke	158 E. Jefferson.		Satisfactory.
332	J. Durham	174 E. Jefferson.		Satisfactory.
333	Mrs. M. Martin	180 E. Jefferson.		Satisfactory.
334	B. Mefford	2220 N. Second.		Satisfactory.
335	John Shoults	2230 N. Second.		Satisfactory.
336	Mrs. M. E. Harris	165 E. Minneapolis.		Satisfactory.
337	John Sturm	2302 N. Second.		Satisfactory.
338	Mrs. Enlow	2322 N. Second.		Satisfactory.
339	R. Blackburn	2324 N. Second.		Satisfactory.
340	D. McGavic	2326 N. Second.		Satisfactory.
341	J. T. White	2421 N. Second.		Satisfactory.
342	Miss Jones	2416 N. Second.		Satisfactory.
343	A. Dillon	2420 N. Second.		Satisfactory.
344	Mrs. Leehend	2424 N. Second.		Satisfactory.
345	Mrs. M. Thompson	2428 N. Second.		Satisfactory.
346	H. Smith	182 E. Chicago.		Satisfactory.
347	John Shoults	2602 N. Second.		Satisfactory.
348	C. C. Castor	320 Chicago Ave.		Satisfactory.
349	E. Sims	153 E. Chicago Ave.		Satisfactory.
350	G. Welcher	174 New Albany Ave.		Satisfactory.
351	W. L. Oliphant	R. R. No. 1		Satisfactory.
352	M. Anders	430 W. New Albany.		Satisfactory.
353	J. Charby	424 W. New Albany.		Satisfactory.
354	J. McCleave	418 W. New Albany.	Same.	Bad.
355	J. Schaller	413 W. New Albany.		Satisfactory.
356	A. E. Dennison	412 W. New Albany.		Satisfactory.
357	W. E. Smith	406 W. New Albany.		Satisfactory.
358	E. Hays	331 W. New Albany.		Satisfactory.
359	Mrs. E. C. Ryker	332 W. New Albany.		Satisfactory.
360	S. Medaries	326 W. New Albany.		Satisfactory.
361	R. Reeves	320 W. New Albany.		Satisfactory.
362	L. Murphy	311 W. New Albany.		Satisfactory.
363	O. C. Organ	322 W. New Albany.		Satisfactory.
364	J. Burke	316 W. New Albany.		Satisfactory.
365	G. Bushere	309 W. New Albany.		Satisfactory.
366	Z. Beggs	306 W. New Albany.		Satisfactory.
367	R. Alexander	227 W. New Albany.		Satisfactory.
368	P. Auldson	226 W. New Albany.		Satisfactory.
369	H. A. Benton	220 W. New Albany.		Satisfactory.
370	E. Potter	210 W. New Albany.		Satisfactory.
371	M. Hammonds	208 W. New Albany.		Satisfactory.
372	S. Mason	209 W. New Albany.		Satisfactory.
373	M. McCabe	201 W. New Albany.		Satisfactory.
374	Ed. Curl	126 W. New Albany.		Satisfactory.
375	A. Brown	119 W. New Albany.		Satisfactory.
376	B. Bower	115 W. New Albany.		Satisfactory.
377	C. Dixon	109 W. New Albany.		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
378	E. Carter	102 W. New Albany		Satisfactory.
379	J. E. Cooper	28 W. New Albany		Satisfactory.
380	S. Spencer	22 W. New Albany		Satisfactory.
381	A. B. Potter	413 W. Chicago		Satisfactory.
382	J. Muentzer	321 W. Chicago		Satisfactory.
383	M. Grimes	320 W. Chicago		Satisfactory.
384	H. Ashly	310 W. Chicago		Satisfactory.
385	J. D. Smith	230 W. Chicago		Satisfactory.
386	M. Davis	28 W. Chicago		Satisfactory.
387		Opposite Creek		Satisfactory.
388		107 W. Chicago		Satisfactory.
389	A. Cooper	109 W. Chicago		Satisfactory.
390	F. J. Dutton	101 W. Chicago		Satisfactory.
391	W. H. Thompson	26 W. Chicago		Satisfactory.
392		3 W. Chicago		Satisfactory.
393	C. Fiddler	Cor. Park & Spring Garden		Satisfactory.
394	W. Cuttsinger	23 Spring Garden		Satisfactory.
395	C. Warner	13 E. Chicago		Satisfactory.
396	C. Fitzgerald	25 E. Chicago		Satisfactory.
397	May Pierson	E. Chicago		Satisfactory.
398	G. Gets	36 E. Chicago		Satisfactory.
399	E. Lyons	105 Spring Garden		Satisfactory.
400	C. Helderman	114 Spring Garden		Satisfactory.
401	D. W. Adams	125 E. Spring Garden		Satisfactory.
402	Mary Lyons			Satisfactory.
403	Kid Wells	2521 N. Day St.	Mr. Schultz	Bad.
404	School House	Cor. Day and N. Albany		Satisfactory.
405	B. B. Blockair	121 E. Chicago		Satisfactory.
406	C. M. Gains	122 E. Chicago		Satisfactory.
407	Mrs. Golding	152 E. New Albany		Satisfactory.
408	P. Kopp	168 W. New Albany		Satisfactory.
409	G. Smith	171 W. New Albany		Satisfactory.
410	A. Pea	161 E. New Albany		Satisfactory.
411	Mr. Thuis	Columbia Park		Satisfactory.
412		Terre Haute Road		Satisfactory.
413	E. Rasico	18 W. New Albany		Satisfactory.
414	W. Southus	14 W. New Albany		Satisfactory.
415	H. Rasico	18 W. New Albany		Satisfactory.
416		8 E. New Albany		Satisfactory.
417		7 E. New Albany		Satisfactory.
418		1 W. New Albany		Satisfactory.
419	J. Brady	3 E. New Albany	Same.	Bad.
420	E. Glenn	11 E. New Albany		Satisfactory.
421	Mrs. Laura Laus	19 E. New Albany		Satisfactory.
422	Mrs. Fisher	16 E. New Albany		Satisfactory.
423	Ed. Williams	22 E. New Albany		Satisfactory.
424	Mrs. Gets	105 E. New Albany		Satisfactory.
425	Mr. Barrett	124 E. New Albany		Satisfactory.
426	R. W. Potts	134 E. New Albany		Satisfactory.
427	Mrs. Dawfer	131 E. New Albany		Satisfactory.
428	W. Denbow	135 E. New Albany		Satisfactory.
429	J. T. Threlpeld	338 W. Portland		Satisfactory.
430	A. Heffner	314 W. Portland		Satisfactory.
431	E. Wilson	310 W. Portland		Satisfactory.
432	J. Boush	304 W. Portland		Satisfactory.
433	C. Wheeler	238 W. Portland		Satisfactory.
434	W. H. Johnson	230 W. Portland	G. Fuller	Satisfactory.
435	W. H. Johnson	230 W. Portland		Satisfactory.
436	J. E. Rice	214 W. Portland		Satisfactory.
437	E. Williams	114 W. Portland		Satisfactory.
438	C. B. Davis	108 W. Portland		Satisfactory.
439	J. Shaw	102 W. Portland		Satisfactory.
440	L. Kyger	28 W. Portland		Satisfactory.
441	W. Dixon	20 W. Portland		Satisfactory.
442	F. Kichell	12 W. Portland		Satisfactory.
443	R. Trueblood	8 W. Portland		Satisfactory.
444	D. H. Byers	2 W. Portland		Satisfactory.
445	J. O. Loben	3 E. Portland		Satisfactory.
446	A. Dozer	7 E. Portland		Satisfactory.
447	Miss Adams	11 E. Portland		Satisfactory.
448	C. A. Finch	15 E. Portland		Satisfactory.
449	C. Smith	19 E. Portland		Satisfactory.
450	P. Seofield	23 E. Portland		Satisfactory.
451	C. F. Parker	27 E. Portland		Satisfactory.
452	K. Ansel	29 E. Portland		Satisfactory.
453	T. Winning	35 E. Portland		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
454	D. Eddleman.	1620 N. First St.	Same.	Satisfactory.
455	C. H. Houston.	103 E. Portland.		Bad.
456	Miss Wolf.	1619 N. First St.		Satisfactory.
457	C. A. Piper.	23 E. Portland.	Same.	Satisfactory.
458	D. Neighbors.	127 E. Portland.		Satisfactory.
459	K. of P. Bldg.	Second and Portland.		Satisfactory.
460	A. P. Robertson.	1622 N. Second.	Same.	Satisfactory.
461	G. Felton.	317 W. St. Clair.		Satisfactory.
462	O. Roadarmel.	211 W. St. Clair.		Satisfactory.
463	W. C. Williams.	207 W. St. Clair.	Same.	Satisfactory.
464	J. Graham.	129 W. St. Clair.		Satisfactory.
465	C. C. Faur.	121 W. St. Clair.		Satisfactory.
466	W. G. Wilson.	119 W. St. Clair.	Same.	Satisfactory.
467		115 W. St. Clair.		Satisfactory.
468	E. Mustin.	113 W. St. Clair.		Satisfactory.
469	M. J. F. Berder.	109 W. St. Clair.	Same.	Satisfactory.
470	F. R. Norris.	105 W. St. Clair.		Satisfactory.
471	W. L. Byers.	23 W. St. Clair.		Satisfactory.
472		9 W. St. Clair.	Same.	Satisfactory.
473	J. Haton.	7 W. St. Clair.		Satisfactory.
474	Mrs. Downing.	1 W. St. Clair.		Satisfactory.
475	E. Decker.	8 E. St. Clair.	Same.	Satisfactory.
476	Mrs. Gardner.	12 E. St. Clair.		Satisfactory.
477	S. Smith.	18 E. St. Clair.		Satisfactory.
478	E. Stibes.	26 E. St. Clair.	Same.	Satisfactory.
479	S. F. Johnson.	30 E. St. Clair.		Satisfactory.
480		32 E. St. Clair.		Satisfactory.
481	H. Abernathy.	36 E. St. Clair.	Same.	Satisfactory.
482	J. R. Bolbin.	1617 N. First.		Satisfactory.
483	D. Lowe.	104 E. St. Clair.		Satisfactory.
484	W. J. King.	108 E. St. Clair.	Same.	Satisfactory.
485	G. M. Faulkner.	112 E. St. Clair.		Satisfactory.
486		116 E. St. Clair.		Satisfactory.
487	J. H. Banks.	120 E. St. Clair.	Townsend.	Satisfactory.
488	C. S. Bittle.	124 E. St. Clair.		Bad.
489	A. Raines.	126 E. St. Clair.		Satisfactory.
490	Mrs. J. S. Frank.	1610 N. Second.	Same.	Satisfactory.
491	A. Ash.	320 E. St. Clair.		Satisfactory.
492	H. Ash.	361 E. St. Clair.		Satisfactory.
493	W. Carraway.	210 W. St. Clair.	Same.	Satisfactory.
494	W. Delaware.	317 W. St. Clair.		Satisfactory.
495	W. Mauck.	302 W. St. Clair.		Satisfactory.
496	H. Holman.	1510 N. Sly St.	Same.	Satisfactory.
497	Tom Nash.	1511 N. Sly St.		Satisfactory.
498	C. Nettleson.	1517 N. Sly St.		Satisfactory.
499	W. Morning.	1521 N. Sly St.	Same.	Satisfactory.
500	W. M. Schoenfeld.	216 W. St. Clair.		Bad.
501		W. St. Clair.		Satisfactory.
502	C. Bell.	1412 N. Chestnut.	Same.	Satisfactory.
503	F. Berden.	116 W. St. Clair.		Satisfactory.
504	W. H. Long.	1424 N. Short.		Satisfactory.
505	S. Parsons.	1420 N. Short.	Same.	Satisfactory.
506	M. L. Wampler.	20 W. St. Clair St.		Satisfactory.
507	R. E. Leonard.	16 W. St. Clair.		Satisfactory.
508	J. Wasson.	1000 W. St. Clair.	Same.	Satisfactory.
509	Ed. Van Ellis.	500 St. Clair.		Satisfactory.
510	S. Ruble.	200 St. Clair.		Satisfactory.
511		1 E. St. Clair.	Same.	Satisfactory.
512	J. Kusch.	3 E. St. Clair.		Satisfactory.
513	H. A. Clark.	7 E. St. Clair.		Satisfactory.
514	W. Okey.	11 E. St. Clair.	Judge Cobb.	Bad.
515	A. Wheeler.	15 E. St. Clair.		Satisfactory.
516	H. Hollis.	29 E. St. Clair.		Satisfactory.
517	R. A. Sparks.	33 E. St. Clair.	Same.	Satisfactory.
518	Mrs. E. Recker.	37 E. St. Clair.		Satisfactory.
519	A. C. Bell.	103 E. St. Clair.		Satisfactory.
520	W. Cart.		Mr. Riddle.	Satisfactory.
521	W. Massey.	1620 N. Second.		Satisfactory.
522	H. Robinson.	1614 N. Second.		Satisfactory.
523	J. A. Schniedeskland.	1526 N. Second.	Same.	Satisfactory.
524	Dr. Prather.	1526 N. Second.		Satisfactory.
525	Union Sanitary Barber Shop.	Second St.		Part.
526	Grocery Store.	1502 N. Second St.	Same.	Satisfactory.
527	E. L. Townsley.	128 E. Sycamore.		Bad.
528	Mary Resnick.	120 E. Sycamore.		Satisfactory.
529	F. Harper.	114 E. Sycamore.		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
530	F. Roloff	108 E. Sycamore		Satisfactory
531	S. L. Goes	102 E. Sycamore		Satisfactory
532	H. J. Dolkey	28 E. Sycamore		Satisfactory
533	R. Timmons	24 W. Sycamore		Satisfactory
534	J. W. Wells	16 E. Sycamore		Satisfactory
535	A. Teamer	10 E. Sycamore		Satisfactory
536	J. Hatcher	8 E. Sycamore		Satisfactory
537	C. E. Applegate	4 E. Sycamore		Satisfactory
538	Mary Friend	2 E. Sycamore		Satisfactory
539	H. Steffy	1 W. Sycamore		Satisfactory
540	P. Woods	3 W. Sycamore		Satisfactory
541	W. Conner	13 W. Sycamore		Satisfactory
542	C. Collins	19 W. Sycamore		Satisfactory
543	J. Eastridge	25 W. Sycamore		Satisfactory
544		105 W. Sycamore		Satisfactory
545		115 W. Sycamore		Satisfactory
546	W. Reiman	125 W. Sycamore		Satisfactory
547	Mr. Sanders	1410 N. Chestnut		Satisfactory
548	B. Godfrey	1406 Chestnut		Satisfactory
549		207 W. Sycamore		Satisfactory
550	W. Taylor	221 W. Sycamore		Satisfactory
551	Mrs. J. Roe	1511 Terre Haute St.		Satisfactory
552	F. Goodwin	327 W. Sycamore		Satisfactory
553	M. F. Cox	317 W. Sycamore		Satisfactory
554	H. Cox	307 W. Sycamore		Satisfactory
555	L. Daily	303 W. Sycamore	Care of Mr. Folks	Bad.
556	J. Durham	1507 Sly St.		Satisfactory
557	F. E. Cochran	229 W. Sycamore		Satisfactory
558	E. Hall	202 W. Sycamore		Satisfactory
559	F. E. Townsley	122 W. Sycamore		Satisfactory
560	G. Evans	104 W. Sycamore		Satisfactory
561	C. Hollensworth	24 W. Sycamore		Satisfactory
562	R. I. Smiley	20 W. Sycamore		Satisfactory
563	G. Ward	14 W. Sycamore		Satisfactory
564		5 E. Sycamore		Satisfactory
565	F. Ottensmeyer	9 E. Sycamore		Satisfactory
566	Mrs. L. Biggs	15 E. Sycamore		Satisfactory
567	Clara Nevly	19 E. Sycamore		Satisfactory
568	R. Townsley	107 E. Sycamore		Satisfactory
569	Mrs. Stille	111 E. Sycamore		Satisfactory
570	J. Wenzl	117 E. Sycamore		Satisfactory
571	S. Mayo	121 E. Sycamore	Same	Bad.
572	R. Little	1420 N. Second		Satisfactory
573	Mr. Cardinal	1406 N. Second	Mrs. Hogan	Bad.
574	C. W. Dickmeyer	1402 N. Second	Same	Satisfactory
575		120 E. Locust St.		Bad.
576	W. Lanham	116 E. Locust St.	Squire Baker	Satisfactory
577	B. Levion	110 E. Locust St.	Squire Baker	Satisfactory
578	A. Vaver	104 E. Locust St.		Satisfactory
579	C. O'Dell	36 E. Locust St.	Care of Borden	Bad.
580	Mrs. Wygant	30 E. Locust St.	Mr. Newton	Bad.
581		219 W. Locust St.		Satisfactory
582	E. Corbett	211 W. Locust St.		Satisfactory
583		N. E. Cor. Chestnut and Locust		
584	F. Rasico	126 W. Locust		Satisfactory
585	L. Graham	115 W. Locust		Satisfactory
586	C. Mikiskier	114 W. Locust		Satisfactory
587	F. E. Rayburn	107 W. Locust		Satisfactory
588	W. Harding	110 W. Locust		Satisfactory
589	G. O. Meyers	104 W. Locust		Satisfactory
590	C. Green	102 W. Locust		Satisfactory
591	Mrs. S. A. Davis	1323 Short St.		Satisfactory
592	C. Campbell	29 W. Locust		Satisfactory
593	Ed. Dodd	23 W. Locust St.		Satisfactory
594	Mrs. D. S. Johnson	21 W. Locust St.		Satisfactory
595	Mr. Longacker			Satisfactory
596	Dr. Frigge	3 W. Locust		Satisfactory
597	C. C. Stevens	1324 Park St.		Satisfactory
598	D. Hanlow	1323 Park St.		Satisfactory
599	Julia Gordon	4 E. Locust		Satisfactory
600	F. Reimbole	19 E. Locust		Satisfactory
601	Mrs. Art Clayton	22 E. Locust		Satisfactory
602	Mrs. E. Farrell	26 E. Locust		Satisfactory
603	F. Dixon	25 E. Locust		Satisfactory
604	A. Arneine	29 E. Locust		Satisfactory

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
605	Mrs. C. A. Dunn	35 E. Locust		Satisfactory.
606	R. Kissick	10 E. Locust		Satisfactory.
607	Will Harper	107 E. Locust		Satisfactory.
608	J. Young	117 E. Locust		Satisfactory.
609	G. B. Daffron	121 E. Locust		Satisfactory.
610	S. Edwards	1317 Chestnut St.		Satisfactory.
611	T. Mickler	1313 Chestnut		Satisfactory.
612	A. La Garde	1306 Chestnut		Satisfactory.
613	J. Armstrong	1303 Chestnut		Satisfactory.
614	L. F. Thuis	1223 Chestnut		Satisfactory.
615	N. Blocher	1219 Chestnut		Satisfactory.
616	J. Blakely	1211 Chestnut		Satisfactory.
617	Joe Matthews	1202 Chestnut		Satisfactory.
618	G. Culhoun	1203 Short		Satisfactory.
619	P. C. Becker	15 Tecumseh St.		Satisfactory.
620	F. Sunderman	1202 Park St.		Satisfactory.
621	C. La Coet	1201 Park St.		Satisfactory.
622	J. Ballhagen	24 E. Tecumseh St.		Satisfactory.
623	Mrs. E. Ham	1205 N. First St.		Satisfactory.
624	L. E. Quinn	1203 N. First St.		Satisfactory.
625	Mrs. F. W. Mischler	1206 N. Second St.		Satisfactory.
626	C. L. Bible	1210 N. Second St.		Satisfactory.
627	F. Dept. No. 3	Cor. R. R. and 2nd St.		Satisfactory.
628	A. F. Koerber	1214 N. Second St.		Satisfactory.
629	J. Martin	1302 N. Second St.		Satisfactory.
630	Mrs. O. Horner	1306 N. Second St.		Satisfactory.
631	G. B. Gilmore	1310 N. Second St.		Satisfactory.
632	O. P. Carey	1314 N. Second St.		Satisfactory.
633	Mrs. Hooten	18 R. R. Ave.		Satisfactory.
634	S. J. McClure	114 R. R. Ave.		Satisfactory.
635	J. Harper	108 R. R. Ave.		Satisfactory.
636	C. Stinther	104 R. R. Ave.		Satisfactory.
637	B. Mastersen	1221 N. Second St.		Satisfactory.
638	Ed. Yochum	1215 N. Second St.		Satisfactory.
639	B. Ferguson	1222 N. Second St.		Satisfactory.
640	H. C. Basee	1214 N. Second St.		Satisfactory.
641	Mary F. Davis	1310 N. Second St.		Satisfactory.
642	H. Ghormley	1304 N. Second St.		Satisfactory.
643	D. Ferman	121 Tecumseh	M. Cars.	Bad.
644		1129 N. First St.		Satisfactory.
645	F. G. Webb	1132 N. First St.		Satisfactory.
646	Mrs. Dickerson	1131 Park St.		Satisfactory.
647	Sarah Hunt	1211 Park St.		Satisfactory.
648	G. Schlameisdorf	1212 Park St.		Satisfactory.
649	J. S. Solomon	1218 Park St.		Satisfactory.
650	Mrs. G. Hoover	1222 Park St.		Satisfactory.
651	J. Huber	1217 Park St.		Satisfactory.
652	F. Schultz	1228 Park St.		Satisfactory.
653	A. Cornoyer	1221 Park St.		Satisfactory.
654	F. Venemann	1223 Park St.		Satisfactory.
655	H. Pyles	1306 Park St.		Satisfactory.
656	J. Bowling	1310 Park St.		Satisfactory.
657	Mrs. M. Allen	1316 Park St.		Satisfactory.
658	L. Moyes	1317 Park St.		Satisfactory.
659	O. C. Totten	1319 Short St.		Satisfactory.
660	W. Sunderman	1313 Short St.		Satisfactory.
661	A. Welton	1307 Short St.		Satisfactory.
662	G. Bumbar	1301 Short St.		Satisfactory.
663	J. Materson	1227 Short St.		Satisfactory.
664	A. J. Davis	1223 Short St.		Satisfactory.
665	A. Huber	1213 Short St.		Satisfactory.
666	A. J. Stockhouse	1207 Short St.	Same.	Bad.
667	C. F. Savage	1206 Short St.		Satisfactory.
668	C. Wathen	1220 Short St.	Mrs. Cullison.	Bad.
669	W. Smith	1222 Short St.	Judge Cobb	Bad.
670	T. W. Perry	1308 Short St.	J. H. Polby	Bad.
671	J. Harding	1318 Short St.		Satisfactory.
672	George Riley	1131 Short St.		Satisfactory.
673	Geo. Barksdale	1127 Short St.	Same.	Bad.
674	C. E. Cox	1121 Short St.		Satisfactory.
675	W. Tromley	1111 Short St.		Satisfactory.
676	E. W. Stewart	1107 Short St.	Ed. Fransmann.	Bad.
677	C. Starkey	1103 Short St.		Satisfactory.
678	C. Hobbs	1112 Short St.		Satisfactory.
679	W. White	1106 Short St.		Satisfactory.
680	I. S. Williams	1104 Short St.		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
681	C. Barksdale	17 Indianapolis Ave.		Satisfactory
682	W. M. Swayzee	2 Indianapolis Ave.		Satisfactory
683	C. Snyder	1107 Park Ave.	Joe Fry	Bad.
684	J. R. Woodall	1113 Park Ave.		Satisfactory
685	W. Elliot	1168 Park Ave.		Satisfactory
686	W. Dalkey	1114 Park Ave.		Satisfactory
687	H. Burns	1118 Park Ave.		Satisfactory
688	Mary L. Graeter	1117 Park Ave.		Satisfactory
689	E. Weickell	1121 Park Ave.		Satisfactory
690	G. E. Gorner	1125 Park Ave.		Satisfactory
691	Mary C. Norton	1130 Park Ave.	Same	Bad.
692	W. E. Ward	1130 First St.		Satisfactory
693	P. Dobbie	1126 North First St.		Satisfactory
694	P. Ward	1127 North First St.		Satisfactory
695	E. W. Galbreath	1121 North First St.		Satisfactory
696	T. Loudermilk	1119 North First St.		Satisfactory
697	C. Richardsville	1116 North First St.		Satisfactory
698		1112 North First St.		Satisfactory
699	Mrs. M. Harvey	1108 North First St.		Satisfactory
700	Lilly Soden	1106 North First St.		Satisfactory
701		1202 Chestnut St.		Satisfactory
702	Geo. Buscher	1126 Chestnut St.		Satisfactory
703	Seymore Johnson	1131 Chestnut St.		Satisfactory
704	C. Blokey	1127 Chestnut St.		Satisfactory
705	W. Spears	1116 Chestnut St.		Satisfactory
706	H. H. Hanover	1117 Chestnut St.		Satisfactory
707	E. Putman	125 W. Indianapolis Ave.		Satisfactory
708	George D. Fuller	112 W. Indianapolis Ave.		Satisfactory
709	M. Wampler	1122 North Second St.		Satisfactory
710	Chas. Mienie	1126 North Second St.	Same	Bad.
711	Mary Carr	1126 North Second St.	Same	Bad.
712	Public Park	Between 1st and 2nd.		Bad.
713	J. M. Turrell	928 North Second St.		Satisfactory
714	Wm. C. Hill	101 Hickman St.		Satisfactory
715	W. F. Perry	919 North First St.		Satisfactory
716	G. Quinn	922 North First St.		Satisfactory
717	M. Quinn	918 North First St.		Satisfactory
718	John Williams	908 North Second St.	Miss Julian	Bad.
719	F. W. Cosby	909 North First St.		Satisfactory
720	T. A. Brouillette	911 North First St.		Satisfactory
721	Mrs. Julia Russell	110 Harrison St.		Satisfactory
722	Mrs. E. Johnson	912 North Second St.		Satisfactory
723	F. Cunningham	914 North Second St.		Satisfactory
724	Ed. Ritterskamp	916 North Second St.		Satisfactory
725	John McKinney	926 North First St.		Satisfactory
726	Edith Rader	11 Hickman St.		Satisfactory
727	R. Sullivan	9 Hickman St.		Satisfactory
728	Miss Cushman	5 Hickman St.		Satisfactory
729	Zeek Lupea	919 Park St.		Satisfactory
730	Mrs. Handscorable	909 Park St.		Satisfactory
731	Emma Crook	817 Park St.		Satisfactory
732	Fred Castor	815 Park St.		Satisfactory
733	Mr. McManus	820 Park St.		Satisfactory
734	A. Flicky	811 Park St.		Satisfactory
735	Henry Donohue	807 Park St.		Satisfactory
736	Henry Beneferl	801 Park St.		Satisfactory
737	Elijah Lance	804 Park St.		Satisfactory
738	W. Henderson	805 Park St.		Satisfactory
739	Fred Dove	814 North First St.		Satisfactory
740	W. Bolt	817 North First St.		Satisfactory
741	J. S. Rush	816 North First St.		Satisfactory
742	Mrs. Kuinger	828 North First St.		Satisfactory
743	Charles Tharp	820 North Second St.		Satisfactory
744	G. Zeigler	816 North Second St.		Satisfactory
745	John Vanwey	810 North Second St.		Satisfactory
746	H. Heidenreich	808 North Second St.		Satisfactory
747	Mrs. J. Kuita	712 North Second St.		Satisfactory
748	Lilly R. Johnson	710 North Second St.		Satisfactory
749	John Murphy	706 North Second St.	Tom Murphy	Bad.
750	Shultz & Gocum	702 North Second St.	Same	Satisfactory
751	C. Merchant	114 Shelby St.		Satisfactory
752	F. E. Murphy	707 North Second St.		Satisfactory
753	A. Kaiser	711 North Second St.		Satisfactory
754	J. H. Polly	719 North Second St.		Satisfactory
755	A. B. Evering	805 North Second St.		Bad.
756	J. R. Thompson	813 North Second St.		Satisfactory



TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
757	A. J. Sharp	815 North Second St.	Mr. Hall	Bad.
758	John Phillips	821 North Second St.		Satisfactory.
759	A. J. Johnson	823 North Second St.	Mrs. Ham	Bad.
760	J. P. Ryan	903 North Second St.		Satisfactory.
761	John Burns	911 North Second St.		Satisfactory.
762	J. L. Kennedy	928 North Third St.		Satisfactory.
763	R. Godan	924 North Third St.		Satisfactory.
764	Mrs. Thomas	916 North Third St.		Satisfactory.
765	John Graham	914 North Third St.		Satisfactory.
766	J. L. Cotlett	712 North Third St.	Same	Bad.
767	Max Scheiman	908 North Third St.		Satisfactory.
768	John Harding	906 North Third St.		Satisfactory.
769	Mrs. G. McBee	902 North Third St.		Satisfactory.
770	Gorman White	216 E. Harrison St.		Satisfactory.
771	Mrs. Ervin	211 E. Harrison St.		Satisfactory.
772	E. Williams	215 E. Harrison St.		Satisfactory.
773	M. Byrne	828 North Third St.		Satisfactory.
774	W. M. Gilbert	219 E. Scott St.		Satisfactory.
775	J. A. Heerding	223 E. Scott St.	Joe Smith	Bad.
776	J. L. Cotlett	712 North Third St.	Mr. Pomill	Bad.
777	G. J. Abey	708 North Second St.	Same	Bad.
778	F. Hoffman	704 North Second St.	Same	Bad.
779	Miss Pomill	703 North Third St.	Same	Bad.
780	Mrs. Lee	303 Scott St.	Same	Bad.
781	B. Whalen	903 North Third St.	Mrs. Ham	Bad.
782	Jacob Pry	907 North Third St.	Mrs. Ham	Bad.
783	C. Armstrong	909 North Third St.	Mrs. Ham	Bad.
784	Vacant House	911 North Third St.		Bad.
785	Mrs. J. E. Williams	917 North Third St.		Satisfactory.
786	Tom Murphy	927 North Third St.	Same	Bad.
787	G. G. Fiddler	315 W. Hickman St.		Satisfactory.
788	Mr. S. M. Blevine	319 W. Hickman St.		Satisfactory.
789	J. B. Worley	323 W. Hickman St.		Satisfactory.
790	E. Jordan	327 W. Hickman St.		Satisfactory.
791	Mary Yochum	1110 North Second St.		Satisfactory.
792	C. M. Yochum	1107 North Second St.		Satisfactory.
793	Thomas Reilly	1117 North Second St.		Satisfactory.
794	Mr. Reilly	1117 North Second St.		Satisfactory.
795	C. F. Louis	1217 North Second St.	Same	Satisfactory.
796	J. S. Rice	1303 North Second St.		Satisfactory.
797	Thomas Kilfoe	1307 North Second St.		Satisfactory.
798	John Yochum	1311 North Second St.		Satisfactory.
799	John Kniff	1315 North Second St.		Satisfactory.
800	J. F. Bonasib	1330 North Second St.	Same	Bad.
801	Mrs. M. A. Hogan	1335 North Second St.	Same	Bad.
802	W. E. Mills	1339 North Second St.	Same	Bad.
803	F. D. Sheid	1403 North Second St.	Same	Bad.
804	Wm. O. Zuber	1407 North Second St.	Same	Bad.
805	Mrs. T. A. Dausen	1917 North Second St.	Same	Bad.
806	Mrs. Freeman	1501 North Second St.		Satisfactory.
807	G. Salsburg	1505 North Second St.	Mr. Puleon	Bad.
808	E. A. Ritterskamp	1509 North Second St.	Same	Bad.
809	S. E. Morgan	1523 North Second St.	Ed. Watson	Bad.
810	T. G. Greitman	1519 North Second St.	Ed. Watson	Bad.
811	Pat Ryan	1603 North Second St.		Satisfactory.
812	Don Ryan	1619 North Second St.		Satisfactory.
813	W. H. Piebles	1621 North Second St.		Satisfactory.
814	G. Vanks	215 Portland St.		Satisfactory.
815	P. Henry	217 E. Portland St.	Pat Ryan	Bad.
816	L. E. Bishop	219 Portland St.		Satisfactory.
817	John Beard	218 Portland St.		Satisfactory.
818	Harry Alliga	214 Portland St.		Satisfactory.
819	J. Wolf	1703 North Second St.		Satisfactory.
820	Central Foundry Co	1719 North Second St.		Satisfactory.
821	H. Merchant	1823 North Second St.		Satisfactory.
822	A. W. Bey	837 North Second St.		Satisfactory.
823	H. Bennett	219 Bronlett St.	Mr. Borden	Bad.
824	W. E. Scott	223 Bronlett St.		Satisfactory.
825	E. L. Highsmith	231 Bronlett St.		Satisfactory.
826	John Maves	235 Bronlett St.		Satisfactory.
827	Sam Trump	236 Bronlett St.		Satisfactory.
828	G. G. Recker	230 Bronlett St.		Satisfactory.
829	Will Nimnick	226 Bronlett St.	Will Williams	Bad.
830	Dr. Witty	1901 North Second St.		Satisfactory.
831	C. Lobly	1917 North Second St.	Same	Bad.
832	H. Willis	1915 North Second St.		Satisfactory.



TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
833	P. S. Fisher	1917 North Second St.	Bldg. and Loan	Satisfactory.
834	W. G. Smith	1919 North Second St.		Satisfactory.
835	(Empty House)	1921 North Second St.		Satisfactory.
836	Mrs. B. Longsdorf	217 Rousillon St.		Satisfactory.
837	Scott Williams	219 Rousillon St.		Satisfactory.
838	O. Atkins	223 Rousillon St.		Satisfactory.
839	Geo. Landis	229 Rousillon St.		Satisfactory.
840	H. E. Craig	226 Rousillon St.		Satisfactory.
841	W. L. Coleman	218 Rousillon St.		Satisfactory.
842	A. Kiel	2003 North Third St.		Satisfactory.
843	G. Cralle	2007 North Second St.		Satisfactory.
844	Mrs. O. H. Goff	2009 North Second St.		Satisfactory.
845	Jennie Liston	2013 North Second St.		Satisfactory.
846	A. J. Lonsnow	215 Manila St.		Satisfactory.
847	E. C. Reed	221 Manila St.	Same	Bad.
848	W. S. Carley	220 Manila St.	Same	Bad.
849	T. Brown	216 Manila St.	Same	Bad.
850	C. Moore	2107 North Second St.		Satisfactory.
851	O. Lance	2109 North Second St.		Satisfactory.
852	D. E. Rogers	2115 North Second St.		Satisfactory.
853	O. Summer	2119 North Second St.	Mr. Evering	Bad.
854	W. H. Robinson	215 Kesinger St.		Satisfactory.
855	M. Dicus	212 Kesinger St.	Mr. Meyers	Bad.
856	T. Sheperd	2201 North Second St.		Satisfactory.
857	W. Gayer	2205 North Second St.		Satisfactory.
858	H. W. Williams	2207 North Second St.	Mr. Borden	Bad.
859	B. Kiesling	2209 North Second St.		Satisfactory.
860	S. M. Morgan	2215 North Second St.		Satisfactory.
861	W. Johns	2219 North Second St.		Satisfactory.
862	G. J. Kirk	2223 North Second St.		Satisfactory.
863	Z. Kimchiloe	2227 North Second St.		Satisfactory.
864	W. A. Johnson	2231 North Second St.		Satisfactory.
865	T. Hefty	2235 North Second St.		Satisfactory.
866	H. Evans	2301 North Second St.		Satisfactory.
867	J. H. Utterback	2309 North Second St.		Satisfactory.
868	Mr. Cloe	2311 North Second St.		Satisfactory.
869	Ross Rayburn	2315 North Second St.	Mr. Mayers	Satisfactory.
870	W. M. Riggle	Silo Co.		Satisfactory.
871	Em. Berry	504 Manila St.		Satisfactory.
872	W. McNeal	508 Manila St.		Satisfactory.
873	T. Conner	510 Manila St.	Mr. Borden	Bad.
874	H. Bean	512 Manila St.		Satisfactory.
875	H. F. McClure	524 Manila St.	Mr. Borden	Bad.
876	D. A. Conie	528 Manila St.		Satisfactory.
877	Mr. Dainbo	2102 N. 6th St.	Mr. Cron	Bad.
878	J. Potts	2116 N. 6th St.	Mr. Borden	Bad.
879	Joe Norris	2122 N. 6th St.	Mr. Borden	Bad.
880	J. Clark	2126 N. 6th St.		Satisfactory.
881	John King	222 E. St. Clair St.		Satisfactory.
882	(Vacant House)	504 E. St. Clair St.		Satisfactory.
883	S. M. Taylor	528 E. St. Clair St.		Satisfactory.
884	C. W. Taylor	530 E. St. Clair St.		Bad.
885	A. P. Snyder	523 Meyers St.		Satisfactory.
886	G. E. Watson	515 Meyers St.		Satisfactory.
887	John Baker	511 Meyers St.		Satisfactory.
888	W. Bushing	505 Meyers St.		Satisfactory.
889	B. Bang	506 Cullop St.		Satisfactory.
890	B. Estridge	1826 N. 6th St.		Satisfactory.
891	S. T. Jacobs	521 Broulette St.		Satisfactory.
892	P. H. Beach	517 Broulette St.		Satisfactory.
893	F. S. Gordaker	513 Broulette St.		Satisfactory.
894	J. F. Dodson	509 Broulette St.		Satisfactory.
895	J. Hsley	504 Broulette St.		Satisfactory.
896	E. L. McHenry	508 Broulette St.		Satisfactory.
897	D. W. Wilks	512 Broulette St.		Satisfactory.
898	N. Conn	518 Broulette St.		Satisfactory.
899	G. Delauter	524 Broulette St.		Satisfactory.
900	W. Williams	1910 N. 6th St.		Satisfactory.
901	Mrs. Godwin	1918 N. 6th St.		Satisfactory.
902	J. Right	1920 N. 6th St.		Satisfactory.
903	O. Fuller	1926 N. 6th St.		Satisfactory.
904	F. Craig	525 Rousillon St.	Mr. Borden	Bad.
905	E. Walker	523 Rousillon St.		Satisfactory.
906	A. D. Stodghill	521 Rousillon St.		Satisfactory.
907	G. Rupe	511 Rousillon St.		Satisfactory.
908	W. H. Donaldson	502 Rousillon St.		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
909	E. Stafford	508 Rousillon St.		Satisfactory.
910	F. Miley	512 Rousillon St.	Mr. Weems	Bad.
911	George Hand	514 Rousillon St.		Satisfactory.
912	Sam Dillon	512 Rousillon St.	Mr. Borden	Bad.
913	Joe Hedge	2026 N. 6th St.		Satisfactory.
914	Joe Bahr	531 Manila St.		Satisfactory.
915	Mrs. Kelly	517 Manila St.		Satisfactory.
916	W. Lumm	511 Manila St.		Satisfactory.
917	James Kidwell	509 Manila St.		Satisfactory.
918	L. B. Brown	503 Manila St.		Satisfactory.
919	S. Schehr	501 Kessinger		Satisfactory.
920	Egloff Milling Co	Minn. St.		Satisfactory.
921	Egloff Milling Co	Minn. St.		Satisfactory.
922	C. Williams	508 Kessinger St.		Satisfactory.
923	R. B. Brocksmith	512 Kessinger St.		Satisfactory.
924	Mrs. McAdams	510 Kessinger St.		Satisfactory.
925	John Fields	511 Kessinger St.	John Brown	Satisfactory.
926	C. Kidwell	312 Kessinger St.		Bad.
927	John Miller	2125 N. 6th St.		Satisfactory.
928	D. M. Metaker	629 Kessinger St.		Satisfactory.
929	G. Foster	631 Kessinger St.		Satisfactory.
930	R. Carmody	633 Kessinger St.		Satisfactory.
931	Anna Able	635 Kessinger St.		Satisfactory.
932	M. Martin	636 Kessinger St.		Satisfactory.
933	N. DeMoss	649 Kessinger St.		Satisfactory.
934	C. Knight	Kessinger St.		Satisfactory.
935	D. Mallory	646 Manila St.		Satisfactory.
936	J. Meyers	642 Manila St.		Satisfactory.
937	J. Wilson	638 Manila St.		Satisfactory.
938	J. Dye Hous	645 Manila St.		Satisfactory.
939	John Yerkes	641 Manila St.		Satisfactory.
940	J. Richardson	637 Manila St.		Satisfactory.
941	F. McCoy	2109 N. 6th St.		Satisfactory.
942	J. Talley	2105 N. 6th St.		Satisfactory.
943	J. T. Henderson	2101 N. 6th St.		Satisfactory.
944	D. Dougherty	631 Manila St.		Bad.
945	J. Morris	639 Manila St.		Satisfactory.
946	Mrs. J. Morris	625 Manila St.		Satisfactory.
947	F. Barro	623 Manila St.		Satisfactory.
948	E. Waters	2025 N. 6th St.		Satisfactory.
949	G. Gussm.	2019 N. 6th St.		Satisfactory.
950	C. Burns	2017 N. 6th St.		Satisfactory.
951	C. P. Crow	2001 N. 6th St.		Satisfactory.
952	A. Whitner	620 Rousillon		Satisfactory.
953	V. Finrock	624 Rousillon		Satisfactory.
954	W. O. McCool	628 Rousillon St.		Satisfactory.
955	S. Nash	638 Rousillon St.		Satisfactory.
956	Ed. King	642 Rousillon St.		Satisfactory.
957	Dyer Mfg. Co.	Rousillon St.		Satisfactory.
958	Dyer Mfg. Co.	Rousillon St.		Satisfactory.
959	W. Prens.	639 Rousillon St.		Satisfactory.
960	W. Wank	629 Rousillon St.		Satisfactory.
961	A. R. Harris	627 Rousillon St.		Satisfactory.
962	H. Lison	623 Rousillon St.		Satisfactory.
963	B. Wissing	1925 N. 6th St.		Satisfactory.
964	F. Almy	1921 N. 6th St.		Satisfactory.
965	Mrs. Youngblood	610 Bromillette St.		Satisfactory.
966	J. Lincoln	616 Bromillette St.		Satisfactory.
967	Mary Compton	622 Bromillette St.		Satisfactory.
968	A. Neal	626 Bromillette St.		Satisfactory.
969	G. Reinhold	632 Bromillette St.		Satisfactory.
970	W. S. Roudebush	636 Bromillette St.		Satisfactory.
971	Mrs. G. Raabe	640 Bromillette St.		Satisfactory.
972	D. W. Johnson	639 Bromillette St.		Satisfactory.
973	H. E. Taylor	635 Bromillette St.		Satisfactory.
974	Fred Stern	631 Bromillette St.		Satisfactory.
975	J. D. Shick	621 Bromillette St.		Satisfactory.
976	F. Highhill	617 Bromillette St.		Satisfactory.
977	H. Monroe	611 Bromillette St.		Satisfactory.
978	W. McMullin	607 Bromillette St.		Satisfactory.
979	W. F. Atwood	603 Bromillette St.		Satisfactory.
980	R. F. Robbins	602 Cullop		Satisfactory.
981	D. W. Faith	612 Cullop St.		Satisfactory.
982	G. B. Riley	618 Cullop St.		Satisfactory.
983	M. Shick	624 Cullop St.		Satisfactory.
984	James Levell	628 Cullop St.		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
985	E. Cooper	632 Cullop St.		Satisfactory.
986	Roy Johnson	636 Cullop St.		Satisfactory.
987	L. Dutton	651 Cullop St.	Mr. Borden	Bad.
988	M. E. McCulla	645 Cullop St.		Satisfactory.
989	W. G. Jordan	641 Cullop St.		Satisfactory.
990	J. Layman	638 Cullop St.		Satisfactory.
991	C. Landis	625 Cullop St.		Satisfactory.
992	S. Stanford	621 Cullop St.		Satisfactory.
993	E. A. Patterson	619 Cullop St.		Satisfactory.
994	W. Grider	613 Cullop St.		Satisfactory.
995	Tomy Seth	607 Cullop St.		Satisfactory.
996	J. Maiese	603 Cullop St.		Satisfactory.
997	W. Dunn	602 Vollmer St.		Satisfactory.
998	W. Welt	606 Vollmer St.		Satisfactory.
999	J. Benley	612 Vollmer St.		Satisfactory.
1000	H. McCoy	620 Vollmer St.		Satisfactory.
1001	L. Kinsler	622 Vollmer St.	Judge Cobb	Bad.
1002	W. H. Cummins	624 Vollmer St.	Judge Cobb	Bad.
1003	E. McClurg	632 Vollmer St.	Mr. Volmer	Bad.
1004	J. Childs	636 Vollmer St.	Mr. Volmer	Bad.
1005	(Vacant House)	640 Vollmer St.		Satisfactory.
1006	E. G. Dabler	644 Vollmer St.		Satisfactory.
1007	Joe Muckineturn	650 Vollmer St.	Same	Bad.
1008	L. Burnett	651 Vollmer St.		Satisfactory.
1009	A. Lane	647 Vollmer St.	Judge Cobb	Bad.
1010	C. Townsley	643 Vollmer St.		Satisfactory.
1011	D. K. Morgan	641 Vollmer St.		Satisfactory.
1012	H. Smith	635 Vollmer St.		Satisfactory.
1013	Geo. Warren	627 Vollmer St.		Satisfactory.
1014	K. T. McDonald	617 Vollmer St.		Satisfactory.
1015	C. Grabbe	613 Vollmer St.		Satisfactory.
1016	Mr. Peck	607 Vollmer St.		Satisfactory.
1017	J. Jones	603 Vollmer St.		Satisfactory.
1018	J. Auberry	1661 N. 6th St.		Bad.
1019	A. Gripenstrot	608 Meyer St.		Satisfactory.
1020	Ed. Wampler	614 Meyer St.		Satisfactory.
1021	C. Grider	618 Meyer St.		Satisfactory.
1022	O. M. Lovelace	624 Meyer St.		Satisfactory.
1023	A. S. Cooley	628 Meyer St.		Satisfactory.
1024	H. Fravel	638 Meyer St.		Satisfactory.
1025	E. Bell	642 Meyer St.		Satisfactory.
1026	R. C. Townsley	648 Meyer St.		Satisfactory.
1027	J. C. Cornaham	650 Meyer St.		Satisfactory.
1028	J. Ridgely	647 Meyer St.		Satisfactory.
1029	A. McCrery	635 Meyer St.		Satisfactory.
1030	J. A. Williamson	627 Meyer St.		Satisfactory.
1031	A. Kixmiller	621 Meyer St.		Satisfactory.
1032	(Vacant House)	617 Meyer St.		Bad.
1033	Mr. Montgomery	611 Meyer St.		Satisfactory.
1034	F. King	607 Meyer St.		Satisfactory.
1035	C. W. Cox	1623 N. 6th St.		Satisfactory.
1036	Mr. Kixmiller	1620 N. 6th St.		Satisfactory.
1037	W. Mustins			Satisfactory.
1038	S. C. Hand	606 St. Clair St.		Satisfactory.
1039	E. Gibbs	608 St. Clair St.		Satisfactory.
1040	E. M. VanWay	620 St. Clair St.		Satisfactory.
1041	J. Broch	624 St. Clair St.		Satisfactory.
1042	Tim Froch	628 St. Clair St.		Satisfactory.
1043	L. B. Foster	636 St. Clair St.		Satisfactory.
1044	J. Dailey	644 St. Clair St.		Satisfactory.
1045	A. Southern	1320 N. 4th St.		Satisfactory.
1046	J. F. Fox	1516 N. 4th St.		Satisfactory.
1047	E. M. Holmes	1512 N. 4th St.		Satisfactory.
1048	J. Baker	1510 N. 4th St.		Satisfactory.
1049	A. Berder	1506 N. 4th St.		Satisfactory.
1050	J. Zinner	1502 N. 4th St.		Satisfactory.
1051	Mrs. Snyder	320 Sycamore St.		Satisfactory.
1052	W. Werner	423 Sycamore St.		Satisfactory.
1053	Henry Schultz	419 Sycamore St.		Satisfactory.
1054	F. C. Grace	415 Sycamore St.		Satisfactory.
1055	Rev Carson	409 Sycamore St.		Satisfactory.
1056	C. Cooper	144 N. 4th St.		Satisfactory.
1057	J. C. Crans	402 Locust St.		Satisfactory.
1058	H. L. Williams	404 Locust St.		Satisfactory.
1059	L. P. Dawdy	406 Locust St.		Satisfactory.
1060	B. Costello	418 Locust St.		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1061		220 Sycamore St.		Satisfactory.
1062	John Duncan.	216 Sycamore St.		Satisfactory.
1063	P. H. Pierson.	217 Sycamore St.		Satisfactory.
1064	F. E. Murphy.	1414 N. 3rd St.	Same	Bad.
1065	O. Ham.	1410 N. 3rd St.	Mrs. Murphy.	Bad.
1066	C. W. Moore.	1406 N. 3rd St.		Satisfactory.
1067	M. E. Stiff.	1404 N. 3rd St.		Satisfactory.
1068	A. E. Kick.	1338 N. 3rd St.		Satisfactory.
1069	J. S. Winchell.	1332 N. 3rd St.		Satisfactory.
1070	John Behymer.	1314 N. 3rd St.		Satisfactory.
1071	Mrs. Williams.	1310 N. 3rd St.		Satisfactory.
1072	O. A. Campbell.	1308 N. 3rd St.		Satisfactory.
1073	C. E. Fordyce.	1306 N. 3rd St.		Satisfactory.
1074	G. Bumbaugh.	1304 N. 3rd St.	Mrs. Williams.	Bad.
1075	L. Litterland.	1212 N. 3rd St.	Mrs. Rawlings.	Bad.
1076	J. Biarkofer.	220 Center St.		Satisfactory.
1077	W. Clark.	214 Center St.	T. Killfooy.	Bad.
1078	Mr. Wiggins.	212 Center St.	Mrs. Hogan.	Satisfactory.
1079	O. Henton.	217 Center St.		Satisfactory.
1080	J. J. Jenkins.	222 Indianapolis Ave.		Satisfactory.
1081	G. Hartman.	1025 N. 4th St.		Satisfactory.
1082	Clara McAndrews.	407 Depot St.		Satisfactory.
1083	W. F. Gardner.	409 Depot St.		Satisfactory.
1084	J. S. Rice.	220 Depot St.	Mr. McAndrew.	Bad.
1085	Mrs. J. McClure.	418 Depot St.		Satisfactory.
1086	A. W. Douglas.	1303 N. 4th St.		Satisfactory.
1087	L. Wilks.	1307 N. 4th St.	Same.	Bad.
1088	W. J. Acker.	1313 N. 4th St.		Satisfactory.
1089	F. J. Rogers.	1317 N. 4th St.		Satisfactory.
1090	J. C. Cardinal.	1303 N. 4th St.		Satisfactory.
1091	C. Holmes.	1525 N. 3rd St.		Satisfactory.
1092	J. M. Tisdale.	1521 N. 3rd St.		Satisfactory.
1093	Ben Layman.	1517 N. 3rd St.		Satisfactory.
1094	M. Osborn.	314 Sycamore.		Bad.
1095	W. E. Dunkens.	1419 N. 3rd St.		Satisfactory.
1096	E. F. Cooper.	1417 N. 3rd St.		Satisfactory.
1097	J. W. Weems.	1411 N. 3rd St.		Satisfactory.
1098	J. Conlin.	1407 N. 3rd St.	Same.	Bad.
1099	R. G. Stewart.	1403 N. 3rd St.	John Risch.	Bad.
1100	M. Wade.	1339 N. 3rd St.	Same.	Bad.
1101	C. Brewer.	1333 N. 3rd St.	Mrs. Menaugh.	Bad.
1102	J. Chadwick.	1329 N. 2nd St.		Satisfactory.
1103	Mrs. Broomer.	1321 N. 3rd St.		Satisfactory.
1104	E. Draper.	1317 N. 3rd St.	McVittay.	Bad.
1105	M. Mayes.	1313 N. 3rd St.	McVittay.	Satisfactory.
1106	Mrs. H. Williams.	1307 N. 3rd St.		Satisfactory.
1107	Ed. Neff.	1303 N. 3rd St.		Satisfactory.
1108	F. Schultheis.	317 Depot St.	Same.	Bad.
1109	Mrs. J. D. Rollins.	311 Depot St.	Mr. Risch.	Bad.
1110	Mrs. A. Borden.	309 Depot St.	Mr. Risch.	Doubtful.
1111	R. C. Nash.	1217 N. 3rd St.		Satisfactory.
1112	W. W. Frun.	1223 N. 3rd St.		Satisfactory.
1113	H. Schoenfeld.	316 Center St.		Satisfactory.
1114	J. Hendry.	318 Center St.		Satisfactory.
1115	F. Hartman.	320 Center St.		Satisfactory.
1116	R. Howell.	324 Center St.		Satisfactory.
1117	G. Rhule.	1204 N. 4th St.		Satisfactory.
1118	R. Ridgeway.	319 Depot St.		Satisfactory.
1119	O. M. Morris.	1302 N. 4th St.	Mrs. Rafferty.	Bad.
1120	W. Ridgeway.	1306 N. 4th St.	Same.	Bad.
1121	H. Furman.	1404 N. 4th St.	Mr. Becker.	Bad.
1122	J. W. Brewster.	1402 N. 4th St.		Satisfactory.
1123	J. F. Hanes.	424 E. Locust St.	Same.	Bad.
1124	Mrs. E. Henry.	411 E. Locust St.	Same.	Bad.
1125	Ed. Brown.	409 E. Locust St.	Mrs. Henry.	Bad.
1126	H. Schaffer.	407 E. Locust St.	Same.	Bad.
1127	Mary Crackle.	403 E. Locust St.	Same.	Bad.
1128	Mrs. R. S. Culbertson.	401 E. Locust St.	Same.	Bad.
1129	W. Johnston.	1327 N. 4th St.	Same.	Bad.
1130	C. C. Teschner.	1334 N. 4th St.	Same.	Bad.
1131	J. Rumer.	1330 N. 4th St.	Same.	Bad.
1132	C. Teschner.	1328 N. 4th St.	Same.	Bad.
1133	R. H. Bombarg.	1324 N. 4th St.		Satisfactory.
1134	J. W. Summers.	1318 N. 4th St.		Satisfactory.
1135	Mrs. A. Flicky.	412 Harrison St.		Satisfactory.
1136	J. Murphy.	902 N. 5th St.	Same.	Bad.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1137	T. Brouillette	906 N. 5th St.		Satisfactory.
1138	H. L. Vincent	918 N. 5th St.		Satisfactory.
1139	E. Frac	928 N. 5th St.		Satisfactory.
1140	(Vacant House)	913 N. 5th St.		Doubtful.
1141	C. Collison	907 N. 5th St.		Satisfactory.
1142	R. H. Simmers	902 N. 5th St.	Mr. Risch	Bad.
1143	Mrs. M. Ryan	514 Harrison St.		Satisfactory.
1144	Miss Emerson	904 N. 6th St.	Same	Bad.
1145	J. J. Hedden	910 N. 6th St.		Satisfactory.
1146	C. Fallow	928 N. 6th St.		Satisfactory.
1147	F. Maloney	1001 E. Hickman	Same	Bad.
1148	W. Rumer	1007 N. 6th St.	Mr. Shepard	Bad.
1149	W. Dant	1011 N. 6th St.	Mr. Montgomery	Bad.
1150	Miss Whitehead	1031 N. 6th St.	Ed. Watson	Bad.
1151	G. T. Sieford	1025 N. 7th St.	J. Onimus	Bad.
1152	J. Russell	1021 N. 7th St.	Tom Murphy	Bad.
1153	Mrs. A. Thuis	1038 Fairground Ave.	Ed. Watson	Bad.
1154	N. Phil.	1028 Fairground Ave.		Satisfactory.
1155	J. C. Ool.	1024 Fairground Ave.		Satisfactory.
1156	J. R. Milburn	1018 Fairground Ave.		Satisfactory.
1157	(Saloon)	Cor. Hickman and Fair-ground Ave.		Bad.
1158	E. Clements	1019 N. 7th St.	Ed. Watson	Bad.
1159	C. F. Sheid Kenley	921 N. 8th St.	Mr. Henderson	Bad.
1160	Mrs. A. Merchant	915 N. 8th St.	Same	Bad.
1161	G. S. Morse	704 N. 4th St.	Same	Bad.
1162	O. Heinekamp	708 N. 4th St.	Same	Satisfactory.
1163	E. Prosser	720 N. 4th St.		Satisfactory.
1164	Miss Laura Knauff	310 Scott St.	Mr. Heinekamp	Bad.
1165	Mary E. Robinson	326 Scott St.	Same	Bad.
1166	Joe Risch	820 N. 4th St.	Same	Bad.
1167	H. H. Grover	824 N. 4th St.		Satisfactory.
1168	F. E. Walton	326 Harrison		Satisfactory.
1169	W. Leonard	403 Harrison		Satisfactory.
1170	E. Delaware	819 N. 4th St.		Satisfactory.
1171	T. H. Crawford	402 Scott St.	Same	Bad.
1172	J. M. Vance	409 Scott St.	Mrs. E. J. Loten	Bad.
1173	E. Phillips	403 Scott St.	Mrs. E. J. Loten	Bad.
1174	Mrs. Ella Green	713 N. 4th St.	Mrs. E. J. Loten	Bad.
1175	J. Prullage	707 N. 4th St.		Satisfactory.
1176	J. De Crasto	429 Scott St.		Satisfactory.
1177	W. H. Trometer	424 Scott St.		Satisfactory.
1178	Mrs. A. M. Bockner	515 Harrison St.	Same	Bad.
1179	Miss Hackman	820 N. 5th St.		Satisfactory.
1180	E. Emison	817 N. 5th St.		Satisfactory.
1181	G. E. Purcell	518 Scott St.	Same	Bad.
1182	Miss M. Wilker	511 Scott St.		Satisfactory.
1183	John Wise	504 Shelby St.	Same	Bad.
1184	Grace Swartzel	702 N. 6th St.		Satisfactory.
1185	L. B. Smith	708 N. 6th St.	Same	Bad.
1186	L. E. Thuis	722 N. 6th St.		Satisfactory.
1187	G. Shepherd	810 N. 6th St.		Satisfactory.
1188	J. E. Wolf	812 N. 6th St.	Same	Bad.
1189	A. Dearduff	820 N. 6th St.	Mrs. Cox	Bad.
1190	C. B. Wilks	521 Harrison St.		Satisfactory.
1191	V. F. D. No. 2	913 N. 6th St.	Mr. Fosmeier	Bad.
1192	M. Gluck	Cor. Harrison & 6th St.	City	Bad.
1193	E. Busch	908 N. 7th St.	Same	Bad.
1194	G. W. Rumer	914 N. 7th St.	Same	Bad.
1195	J. Hensley	916 N. 7th St.	Same	Bad.
1196	(Vacant)	609 Harrison St.	Same	Bad.
1197	M. K. Thomas	827 N. 8th St.		Satisfactory.
1198	P. M. O'Donnell	825 N. 8th St.		Satisfactory.
1199	H. Lewis	813 N. 8th St.	Mr. Ritterskamp	Bad.
1200	Clara McAndrew	616 Scott St.	Same	Bad.
1201	Mrs. E. McDonald	820 N. 7th St.	E. Meyer	Bad.
1202	Mrs. J. Thurgood	722 N. 7th St.		Satisfactory.
1203	(Vacant)	611 Scott St.	Mrs. Huff	Bad.
1204	Miss Heits	719 N. 6th St.	Mrs. Huff	Bad.
1205	Ella D. Helm	711 N. 6th St.	Same	Bad.
1206	Mrs. Sue Young	612 Shelby St.		Satisfactory.
1207	B. R. Shoemaker	714 N. 7th St.	Ed. Watson	Satisfactory.
1208	Agnes Brown	719 N. 7th St.		Satisfactory.
1209	Allen Meyers	715 N. 7th St.	Mrs. Ritterskamp	Bad.
1210	John Lackey	711 N. 7th St.	Mr. Weisenberger	Bad.
1211		709 N. 7th St.		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1212	T. S. Gouchenow	701 N. 7th St.		Satisfactory.
1213	G. Jordan	712 N. 8th St.		Satisfactory.
1214	Miss Smack	716 N. 8th St.	Mr. Twietmeyer	Bad.
1215	Mrs. Adams	728 N. 8th St.		Satisfactory.
1216	G. F. Twietmeyer	724 N. 8th St.		Satisfactory.
1217	German Lutheran School	Corner Scott and 8th.		Satisfactory.
1218	H. A. Bulten	703 N. 8th St.		Satisfactory.
1219	Mrs. F. Miller	826 Shelby St.		Satisfactory.
1220	J. Johnson	712 N. 9th St.		Satisfactory.
1221	Prof. Fethaner	716 N. 9th St.		Satisfactory.
1222	W. De Priest	721 N. 9th St.		Satisfactory.
1223	R. C. Day	715 N. 9th St.	Same	Bad.
1224	Mrs. R. Jones	713 N. 9th St.		Satisfactory.
1225	Mrs. Mary Biester	709 N. 9th St.		Satisfactory.
1226	Gus Brandenburg	704 N. 10th St.	Same	Bad.
1227	W. Collison	706 N. 10th St.		Satisfactory.
1228	Mrs. Wagner	712 N. 10th St.		Satisfactory.
1229	Ass. Evans	716 N. 10th St.		Satisfactory.
1230	C. Bultman	720 N. 10th St.	Will Wagner	Bad.
1231	F. Monroe	721 N. 10th St.	Same	Bad.
1232	F. Katscorke	717 N. 10th St.		Satisfactory.
1233	E. A. Arthur	705 N. 10th St.		Satisfactory.
1234	G. S. Cox	703 N. 10th St.		Satisfactory.
1235	H. S. Cox	703 N. 10th St.		Satisfactory.
1236	G. Almy	710 N. 10th St.		Satisfactory.
1237	A. Monroe	1019 Scott St.	Same	Bad.
1238	Ed. Klafcsinsky	1109 Scott St.		Satisfactory.
1239	— Kamaschefsky.	700 Upper 11th St.	Same	Doubtful.
1240	G. Colvin	714 Upper 11th St.		Satisfactory.
1241	C. Halter	712 Upper 11th St.		Satisfactory.
1242	M. O'Donnell	702 Upper 11th St.		Satisfactory.
1243	Mrs. Frederick	701 Upper 11th St.	Same	Bad.
1244	Mrs. Frederick	705 Upper 11th St.	Same	Bad.
1245	Mrs. Wilson	711 N. Upper 11th St.		Satisfactory.
1246	V. Creshon	713 Upper 11th St.	V. Creshon.	Bad.
1247	W. F. Gilbert	720 N. 12th St.	W. F. Gilbert.	Bad.
1248	C. Eason	718 N. 12th St.	C. Eason.	Bad.
1249	J. L. Eechbach	714 N. 12th St.	Grant Beasley.	Bad.
1250	Mrs. Turner	712 N. 12th St.	Mrs. Turner	Bad.
1251	J. Johnson	708 N. 12th St.	Oliver Coy	Satisfactory.
1252	E. Johnson	706 N. 12th St.	Oliver Coy	Satisfactory.
1253	P. Hallard	1156 Shelby St.	P. Hallard.	Satisfactory.
1254	Mrs. Sophie	703 N. 12th St.	Mrs. Sophie.	Bad.
1255	R. Boelling	707 N. 12th St.	R. Boelling.	Satisfactory.
1256	C. Conn	711 N. 12th St.	John Milan.	Satisfactory.
1257	Mrs. H. Vatchett	713 N. 12th St.	Mr. Bulling.	Bad.
1258	Mrs. Bohn	720 N. 13th St.	Mrs. Bohn.	Bad.
1259	John Biggs	714 N. 13th St.	Mr. Anton.	Satisfactory.
1260	J. Anton	708 N. 13th St.	J. Anton.	Bad.
1261	N. Tromley	704 N. 14th St.	J. Anton.	Satisfactory.
1262	A. C. Harris	701 N. 13th St.	E. Volmer.	Bad.
1263	G. F. Miller	705 N. 13th St.	G. F. Miller.	Bad.
1264	T. J. Elder	715 N. 12th St.	T. J. Elder.	Bad.
1265	Mrs. Brackin	713 N. 13th St.	Mrs. Brackin.	Bad.
1266	E. Fortner	1309 Scott St.	Emma Mortar.	Bad.
1267	M. Fortner	1311 Scott St.	M. Fortner.	Bad.
1268	A. Brook	1313 Scott St.	A. Brook.	Bad.
1269		Vacant.		Bad.
1270	H. Jones	1320 Shelby St.	H. Jones.	Bad.
1271	L. Johnson	1318 Shelby St.	L. Johnson.	Bad.
1272	Mrs. J. H. Pickle	1314 Shelby St.	Mrs. J. H. Pickle.	Bad.
1273	C. Dreiman	1310 Shelby St.	E. Volmer.	Bad.
1274	J. Hopkins	821 N. 14th St.	J. Hopkins.	Bad.
1275	H. Goines	1322 Scott St.	Mrs. Waltons.	Bad.
1276	D. Turner	1318 Scott St.	Mrs. Schrader.	Bad.
1277	G. Hastings	13th and Scott Sts.	Mr. Green.	Bad.
1278	H. Sparenberg	807 N. 13th St.	H. Sparenberg.	Bad.
1279	J. Jordan	809 N. 13th St.	A. G. Work.	Bad.
1280	C. Kidwell	813 N. 13th St.	H. Somers.	Satisfactory.
1281	Tom Martin	821 N. 7th St.	J. M. Quinn.	Bad.
1282	Tom Chambers	817 N. 7th St.	Mr. Milburn.	Bad.
1283	H. C. Norris	813 N. 7th St.	Mr. Milburn.	Bad.
1284	Miss C. Scott	811 N. 7th St.	Miss C. Scott.	Bad.
1285	F. Z. Saiter	805 N. 7th St.	F. Z. Saiter.	Bad.
1286	F. Shank	801 N. 7th St.	Mr. Saiter.	Satisfactory.
1287		Vacant.		Bad.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1288	J. L. Byers	818 N. 8th St.	J. L. Byers	Bad.
1289	G. T. O'Key	824 N. 8th St.	G. T. O'Key	Bad.
1290	P. L. Wilks	828 N. 8th St.	Mr. Kennedy	Bad.
1291	Vacant	827 N. 8th St.		Bad.
1292	Mr. Bevelhimer	823 N. 8th St.	Mr. Kuhlmeier	Bad.
1293	L. H. Fowler	813 N. 8th St.	L. H. Fowler	Satisfactory.
1294	S. S. Cantwell	807 N. 8th St.	S. S. Cantwell	Satisfactory.
1295	Ed. Bussey	803 N. 8th St.	Mrs. Hartman	Satisfactory.
1296	Miss Williams	804 N. 9th St.	Miss Williams	Satisfactory.
1297	T. Winterberg	808 N. 9th St.	Mr. Morgan	Satisfactory.
1298	Mr. Farrell	812 N. 9th St.	Mr. Farrell	Satisfactory.
1299	Mr. Halter	822 N. 9th St.	C. Wesel	Satisfactory.
1300	C. Wesel	828 N. 9th St.	C. Wesel	Satisfactory.
1301	John Quinn	829 N. 9th St.	Mr. Bubanser	Satisfactory.
1302	Mrs. C. Nancett	821 N. 9th St.	Mrs. C. Nancett	Satisfactory.
1303	W. Willie	815 N. 9th St.	W. Willie	Satisfactory.
1304	M. Gluck	807 N. 9th St.	M. Gluck	Satisfactory.
1305	Vacant	803 N. 9th St.		Satisfactory.
1306	Mr. Burrow	806 N. 10th St.	Mr. Burrow	Satisfactory.
1307	W. Bynum	808 N. 10th St.	Mr. Weisenberger	Satisfactory.
1308	H. A. Thornton	810 N. 10th St.	Mr. Weisenberger	Satisfactory.
1309	S. L. Wilson	812 N. 10th St.	Mr. Joe Swartz	Satisfactory.
1310	C. Auberry	816 N. 10th St.	J. F. Whitmeyer	Satisfactory.
1311	G. Divine	818 N. 10th St.	J. F. Whitmeyer	Satisfactory.
1312	P. F. Kenney	822 N. 10th St.	Mrs. M. Recker	Satisfactory.
1313	C. Wesel	824 N. 10th St.	C. Wesel	Satisfactory.
1314	A. Sannanan	827 N. 10th St.	A. Sannanan	Satisfactory.
1315	U. Kerkasky	823 N. 10th St.	U. Kerkasky	Satisfactory.
1316	E. Floyd	817 N. 10th St.	Mrs. Baker	Satisfactory.
1317	L. C. Kirchhoff	811 N. 10th St.	L. C. Kirchhoff	Satisfactory.
1318	J. E. Cusick	809 N. 10th St.	Mr. Twellmerer	Satisfactory.
1319	C. Burnn	1008 Scott St.	C. Burnn	Satisfactory.
1320	Miss Held	1018 Scott St.	Miss Held	Satisfactory.
1321	Mrs. C. Young	814 N. 11th St.	Mrs. C. Young	Satisfactory.
1322	L. Rogers	803 N. 11th St.	L. Rogers	Satisfactory.
1323	Mrs. F. Witschork	807 N. 11th St.	Mrs. F. Witschork	Bad.
1324	Mrs. Monrone	813 N. 11th St.	Mrs. Monrone	Bad.
1325	Ed. Schrader	817 N. 11th St.	Ed. Schrader	Bad.
1326	J. L. Trueblood	823 N. 11th St.	J. L. Trueblood	Bad.
1327	Vacant	827 N. 11th St.	Ed. Watson	Satisfactory.
1328	C. Heady	828 Upper 11th St.	M. McKeifer	Satisfactory.
1329	Vacant	828 Upper 11th St.	M. McKeifer	Satisfactory.
1330	T. Pickering	818 N. Upper 11th St.	T. Pickering	Satisfactory.
1331	L. Harris	812 Upper 11th St.	J. Shoemaker	Satisfactory.
1332	Ed. Fisher	808 N. Upper 11th St.	Ed. Fisher	Satisfactory.
1333	C. Parr	802 Upper 11th St.	C. Parr	Satisfactory.
1334	Mrs. Dent	1011 Scott St.	Mrs. Dent	Satisfactory.
1335	R. A. Adamson	803 Upper 11th St.	Mr. Morton	Bad.
1336	M. V. Smithson	1162 Scott St.	Mr. Morton	Satisfactory.
1337	C. E. Parr	813 Upper 11th St.	Mrs. Bailey	Satisfactory.
1338	C. Hill	815 N. Upper 11th St.	Anna Gross	Satisfactory.
1339	C. Fremder	827 Upper 11th St.	C. Fremder	Satisfactory.
1340	J. Marone	828 N. 12th St.	Mr. Fremder	Satisfactory.
1341	R. Linnett	820 N. 12th St.	R. Linnett	Satisfactory.
1342	A. J. Harvey	818 N. 12th St.	Mr. Worley	Satisfactory.
1343	S. Deem	814 N. 12th St.	Mr. Worley	Satisfactory.
1344	Lee Milam	809 N. 12th St.	Lee Milam	Bad.
1345	J. Traylor	802 N. 12th St.	Miss Sager	Bad.
1346	H. Hulen	805 N. 12th St.	C. Hemky	Bad.
1347	T. Hargis	803 N. 12th St.	C. Hemky	Bad.
1348	W. Bingwald	809 N. 12th St.	C. Hemky	Bad.
1349	Vacant	811 N. 12th St.	C. Hemky	Bad.
1350	G. Wire	815 N. 12th St.	Frank Thorn	Satisfactory.
1351	D. A. McClain	817 N. 12th St.	Frank Thorn	Satisfactory.
1352	F. Milam	828 N. 12th St.	Grace Swartzel	Satisfactory.
1353	J. Robertson	1211 Harrison	J. Robertson	Satisfactory.
1354	L. Hamke	818 N. 13th St.	L. Hamke	Satisfactory.
1355	H. Flora	816 N. 13th St.	H. Flora	Bad.
1356	J. Bonhomme	810 N. 13th St.	J. Bonhomme	Bad.
1357	H. C. Moran	802 N. 13th St.	H. Brocksmitth	Bad.
1358	J. Johnson	817 N. 12th St.	J. Johnson	Bad.
1359	C. Uland	823 N. 13th St.	C. Hemky	Bad.
1360	Vacant	817 N. 14th St.		Bad.
1361	John Zuber	801 N. 7th St.	John Zuber	Satisfactory.
1362	W. A. Leffler	714 Harrison St.	Mr. Weisenberger	Satisfactory.
1363	C. Heidenreich	807 N. 12th St.	C. Heidenreich	Bad.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1364	Joe Onimus	1031 N. 7th St.	Joe Onimus	Bad.
1365	Mrs. Orwater	1037 N. 7th St.	Mrs. Orwater	Bad.
1366	D. Bunting	1014 N. 8th St.	J. Smith	Satisfactory.
1367	F. Moore	926 N. 8th St.	M. Juber	Bad.
1368	Mrs. Tancsley	922 N. 8th St.	C. Hemke	Bad.
1369	S. L. Combe	912 N. 8th St.	Mr. Wessel	Bad.
1370	M. L. Wessel	908 N. 9th St.	M. L. Wessel	Bad.
1371	C. Wessel	902 N. 8th St.	C. Wessel	Satisfactory.
1372	C. Hemky	905 N. 8th St.	C. Hemky	Satisfactory.
1373	J. A. Collison	915 N. 8th St.	J. A. Collison	Satisfactory.
1374	Ed. Lauson	917 N. 8th St.	Ed. Lauson	Satisfactory.
1375	A. Kixmiller	923 N. 8th St.	A. Kixmiller	Satisfactory.
1376	J. Moore	1011 N. 8th St.	Mrs. Kemp	Satisfactory.
1377	Mrs. K. Ready	1017 N. 8th St.	Mrs. K. Ready	Satisfactory.
1378	J. Morris	1027 N. 8th St.	Mr. Kelly	Satisfactory.
1379	H. W. Williams	1037 N. 8th St.	Mr. Kelly	Satisfactory.
1380	S. M. Bynum	1047 N. 8th St.	Mary Slate	Bad.
1381	J. T. O'Conner	811 Wabash St.	J. T. O'Conner	Bad.
1382	J. T. O'Conner	1022 N. 9th St.	J. T. O'Conner	Bad.
1383	Mrs. S. Hall	1022 N. 9th St.	Mrs. S. Hall	Bad.
1384	C. Simpson	1020 N. 9th St.	T. Wilkerson	Satisfactory.
1385	Mary L. Watson	1018 N. 9th St.	Mary L. Watson	Satisfactory.
1386	F. Kennedy	1010 N. 9th St.	Mr. Simeson	Satisfactory.
1387	W. Robinson	1008 N. 9th St.	W. Robinson	Bad.
1388	G. Watson	1002 N. 9th St.	Mr. Neman	Bad.
1389	G. Beesley	924 N. 9th St.	G. Beesley	Satisfactory.
1390	P. Phillippe	918 N. 9th St.	P. Phillippe	Satisfactory.
1391	H. Lankford	914 N. 9th St.	J. Hearsey	Satisfactory.
1392	C. E. Purdy	906 N. 9th St.	Mr. Hearsey	Satisfactory.
1393	C. Brocksmith	902 N. 9th St.	C. Brocksmith	Satisfactory.
1394	C. Hemky	806 Harrison St.	C. Hemky	Satisfactory.
1395	W. F. Hinds	907 N. 9th St.	Mrs. Hemmaman	Satisfactory.
1396	F. T. Reele	911 N. 9th St.	Mrs. Dollinger	Satisfactory.
1397	E. Silverman	915 N. 9th St.	E. Silverman	Bad.
1398	B. F. Cable	925 Hick St.	B. F. Cable	Satisfactory.
1399	John Hunkler	1003 N. 9th St.	Mrs. Turner	Satisfactory.
1400	Mrs. Bernstein	1005 N. 9th St.	Mrs. Turner	Bad.
1401	Della Watson	1021 N. 9th St.	Mr. Beesley	Bad.
1402	D. Reeves	1023 N. 9th St.	Mr. Beesley	Satisfactory.
1403	I. C. Tilton	1025 N. 9th St.	Mrs. Madigan	Satisfactory.
1404	G. Edwards	1029 N. 9th St.	Mrs. Yokum	Satisfactory.
1405	C. Martin	1031 N. 9th St.	Mrs. Cornick	Satisfactory.
1406	D. Manis	901 Wabash St.	Mr. Grotte	Satisfactory.
1407	N. Boren	905 Wabash St.	C. Grotte	Satisfactory.
1408	W. P. Beesley	927 Wabash St.	W. P. Beesley	Satisfactory.
1409	J. Stewart	1036 N. 10th St.	Mr. De Bruler	Satisfactory.
1410	E. Carter	1030 N. 10th St.	E. Carter	Satisfactory.
1411	Ed. Brouillette	1026 N. 10th St.	Ed. Brouillette	Satisfactory.
1412	I. Drain	1020 N. 10th St.	Mr. Marits	Bad.
1413	C. E. Moore	1018 N. 10th St.	Mrs. Meyers	Bad.
1414	G. Wagner	926 Harrison St.	G. Wagner	Satisfactory.
1415	E. Weitsel	903 N. 10th St.	E. Weitsel	Satisfactory.
1416	C. Gordon	913 N. 10th St.	C. Gordon	Bad.
1417	Wm. Trapp	921 N. 10th St.	B. F. Kable	Bad.
1418	C. V. David	923 N. 10th St.	B. F. Kable	Satisfactory.
1419	Lee Corn	925 N. 10th St.	B. F. Kable	Satisfactory.
1420	H. Memann	1003 N. 10th St.	H. Memann	Satisfactory.
1421	I. W. Beckes	1007 N. 10th St.	Arthur Beckes	Satisfactory.
1422	M. Marits	1011 N. 10th St.	M. Marits	Satisfactory.
1423	Mr. Vanameyer	1019 N. 10th St.	Mr. Vanameyer	Satisfactory.
1424	Vacant	1021 N. 10th St.	Mr. Chambers	Satisfactory.
1425	Mrs. A. Duncan	1023 N. 10th St.	Miss Kirk	Satisfactory.
1426	M. Robinson	1025 N. 10th St.	Mr. Miller	Satisfactory.
1427	Mrs. Johnson	1027 N. 10th St.	Mrs. Johnson	Bad.
1428	Ed. West	1031 N. 10th St.	Ed. West	Satisfactory.
1429	J. D. Murray	1009 Wabash Ave.	J. D. Murray	Satisfactory.
1430	W. J. Robinson	1015 Wabash Ave.	W. J. Robinson	Satisfactory.
1431	Rev. L. L. Schooner	1021 Wabash Ave.	C. H. Hemke	Satisfactory.
1432	G. E. Carter	1025 Wabash Ave.	Mrs. Gould	Satisfactory.
1433	T. McCoy	1032 N. 11th St.	T. McCoy	Satisfactory.
1434	G. Osha	1028 N. 11th St.	G. Osha	Satisfactory.
1435	Vacant	1022 N. 11th St.	Mr. Nagle	Satisfactory.
1436	O. Berdelow	1018 N. 11th St.	Mr. Murray	Satisfactory.
1437	Mrs. L. Hopkins	1016 N. 11th St.	Mrs. L. Hopkins	Satisfactory.
1438	W. M. Maxfields	1004 N. 11th St.	W. M. Maxfields	Satisfactory.
1439	Mrs. S. Heinze	928 N. 11th St.	Mrs. S. Heinze	Satisfactory.



TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1440	Ed. Kuhlmeier	922 N. 11th St.	Ed. Kuhlmeier	Satisfactory.
1441	C. Horner	918 N. 11th St.	C. Horner	Satisfactory.
1442	Mrs. E. Van Kirk	914 N. 11th St.	Mrs. E. Van Kirk	Satisfactory.
1443	L. Long	912 N. 11th St.	L. Long	Satisfactory.
1444	Vacant	903 N. 11th St.		Bad.
1445	Ed. Boyd	907 N. 11th St.	Mr. Schrader	Bad.
1446	H. Schrader	911 N. 11th St.	Mr. Schrader	Satisfactory.
1447	T. Purcell	917 N. 11th St.	T. Purcell	Bad.
1448	Ed. Biester	919 N. 11th St.	L. Weisenberger	Satisfactory.
1449	A. Runyon	1103 Hicks St.	A. Runyon	Satisfactory.
1450	A. Edelmann	1007 N. 11th St.	Mr. Yokum	Satisfactory.
1451	F. A. Yocum	1011 N. 11th St.	F. A. Yocum	Satisfactory.
1452	G. C. Gleason	1017 N. 11th St.	Mr. Meyers	Satisfactory.
1453	Bert Herr	1023 N. 11th St.	Bert Herr	Satisfactory.
1454	Ed. Robinson	1027 N. 11th St.	Mr. Tuitmeier	Satisfactory.
1455	S. A. Adams	1029 N. 11th St.	S. A. Adams	Bad.
1456	B. Scales	1031 N. 11th St.	Mr. Mortar	Satisfactory.
1457	H. Hart	1035 Upper 11th	H. Hart	Satisfactory.
1458	Mrs. Gilewee	1115 Hickman St.	Mrs. Gilewee	Bad.
1459	S. Bottles	920 Upper 11th	S. Bottles	Satisfactory.
1460	Paul Brown	904 Upper 11th	G. Pennington	Satisfactory.
1461	C. Schultz	902 Upper 11th	C. Schultz	Satisfactory.
1462	J. Green	903 Upper 11th	Mr. Frender	Satisfactory.
1463	Mrs. L. Edwards	907 Upper 11th	Mrs. L. Edwards	Satisfactory.
1464	J. L. Leonard	909 Upper 11th	Judge Willaby	Satisfactory.
1465	C. Bohling	917 Upper 11th	Mrs. Bottles	Satisfactory.
1466	C. H. Grote	1119 Hickman St.	C. H. Grote	Satisfactory.
1467	H. Schrader	1007 N. Upper 11	S. Kline	Satisfactory.
1468	J. Hornback	1015 Upper 11th	S. Kline	Satisfactory.
1469	G. Falls	1037 Upper 11th	G. Falls	Satisfactory.
1470	T. Allen	1032 N. 12th St.	Mr. Rumor	Satisfactory.
1471	W. Frederick	1030 N. 12th St.	W. Frederick	Satisfactory.
1472	W. S. Murphy	1026 N. 12th St.	W. S. Murphy	Bad.
1473	J. M. Monroe	1014 N. 12th St.	Mr. Glass	Bad.
1474	Ed. Fortner	1010 N. 12th St.		Bad.
1475	J. Cardinal	1006 N. 12th St.	J. Cardinal	Bad.
1476	W. T. Waters	1004 N. 12th St.	W. T. Waters	Bad.
1477	Vacant	1136 Hickman St.	Mr. Bushy	Bad.
1478	Fred Wise	922 N. 12th St.	Fred Wise	Satisfactory.
1479	E. Sparenburg	920 N. 12th St.	J. Swartz	Satisfactory.
1480	J. E. Weber	916 N. 12th St.	J. E. Weber	Satisfactory.
1481	J. J. Rumer	910 N. 12th St.	J. J. Rumer	Satisfactory.
1482	H. Kimmell	908 N. 12th St.	H. Kimmell	Bad.
1483	J. Milan	902 N. 12th St.	Mrs. Boedling	Satisfactory.
1484	C. Slomer	903 N. 12th St.	C. Slomer	Bad.
1485	Mary Bible	909 N. 12th St.	Mary Bible	Satisfactory.
1486	S. Brown	911 N. 12th St.	George Falls	Satisfactory.
1487	L. Jordan	915 N. 12th St.	Elizabeth Falls	Satisfactory.
1488	Mrs. O'Leary	921 N. 12th St.	Elizabeth Falls	Satisfactory.
1489	Wm. Blunk	1203 Hickman St.	C. L. Bible	Satisfactory.
1490	John Kahrl	1003 N. 12th St.	Mr. Menning	Satisfactory.
1491	G. Jordon	1007 N. 12th St.	G. Jordon	Satisfactory.
1492	H. Frederick	1009 N. 12th St.	H. Frederick	Satisfactory.
1493	O. McGough	1073 N. 12th St.	Mr. Stear	Satisfactory.
1494	Francis Rose	1015 N. 12th St.	Mr. Stear	Bad.
1495	Mrs. B. Kirsch	1017 N. 12th St.	Mrs. B. Kirsch	Satisfactory.
1496	H. C. Dempster	1021 N. 12th St.	H. C. Dempster	Satisfactory.
1497	Thomas Dante	1025 N. 12th St.	Will Tenschner	Satisfactory.
1498	Will Pufahl	1028 N. 13th St.	Will Pufahl	Satisfactory.
1499	J. Moore	1032 N. 13th St.	J. Moore	Bad.
1500	H. Jones	1024 N. 13th St.	Mr. Kurts	Bad.
1501	Mrs. H. Courtney	1014 N. 13th St.	Mr. Fort	Bad.
1502	C. A. Sellers	1228 Hickman St.	B. F. Wheeler	Bad.
1503	F. Jordon	1229 Hickman St.	John Shoemaker	Bad.
1504	Vacant	1221 Hickman St.	John Shoemaker	Bad.
1505	J. Messel	722 N. 13th St.	J. Messel	Satisfactory.
1506	S. Eoff	916 N. 13th St.	Mrs. L. Willis	Satisfactory.
1507	G. W. Ferguson	910 N. 13th St.	Mr. Messel	Satisfactory.
1508	J. G. Worley	904 N. 13th St.	J. G. Worley	Satisfactory.
1509	E. Brown	902 N. 13th St.	E. Brown	Bad.
1510	S. T. Goodman	1005 N. 13th St.	John Davis	Bad.
1511	H. Melvin	1009 N. 13th St.	W. P. Beasley	Bad.
1512	W. Pifer	1015 N. 13th St.		Bad.
1513	Elizabeth Lane	1023 N. 13th St.	Elizabeth Lane	Bad.
1514	J. E. Rout	1027 N. 13th St.	J. E. Rout	Satisfactory.
1515	J. Bainick	1031 N. 13th St.	Miss Tuner	Bad.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1516	D. Burress	1224 N. 14th St.	J. Adams	Bad.
1517	C. A. Cuny	1022 N. 14th St.	Mr. Mortar	Bad.
1518	M. Miller	1020 N. 14th St.	Mr. Hawkes	Bad.
1519	E. F. Scales	1014 N. 14th St.	E. F. Scales	Bad.
1520	H. H. Corrie	1010 N. 14th St.	G. McAnderson	Bad.
1521	V. C. Crow	1006 N. 14th St.	Judge Cobb	Bad.
1522	Emma Westfall	1004 N. 14th St.	Emma Westfall	Satisfactory.
1523	O. Winger	1003 N. 14th St.	Mr. Schrader	Satisfactory.
1524	L. S. Kenison	1011 N. 14th St.	L. S. Kenison	Satisfactory.
1525	B. Gowines	1017 N. 14th St.	Mr. Schrader	Satisfactory.
1526	F. Reny	1021 N. 14th St.	Mr. Walter	Bad.
1527	J. Ross	1023 N. 14th St.	George Falls	Satisfactory.
1528	E. J. Heny	1025 N. 14th St.	E. J. Heny	Satisfactory.
1529	M. Brannum	1027 N. 14th St.	Mr. Pennington	Satisfactory.
1530	B. H. Elliott	1201 Upper 11th St.	B. H. Elliott	Satisfactory.
1531	A. V. Talow	1207 Upper 11th St.	A. V. Talow	Satisfactory.
1532	J. Bedford	1221 N. 14th St.	Mr. Zuber	Satisfactory.
1533	P. Bonewits	1231 Upper 11th	P. Bonewits	Satisfactory.
1534	W. C. Smith	1237 Upper 11th	Sam White	Satisfactory.
1535	Sam White	1243 Upper 11th	Sam White	Satisfactory.
1536	Scott Crane	1244 Upper 11th	Miss Sullivan	Satisfactory.
1537	E. Ridgely	1232 Upper 11th	Mr. Montgomery	Satisfactory.
1538	T. Goodael	1208 Upper 11th	Mr. Montgomery	Bad.
1539	O. Springer	1126 Wabash Ave.	Lissie Mortar	Satisfactory.
1540	A. J. Bultman	1206 Upper 11th	A. J. Bultman	Satisfactory.
1541	G. W. Roduck	1201 N. 11th St.	G. W. Roduck	Bad.
1542	J. D. Wonderly	1219 N. 11th St.	Chas. Hoten	Satisfactory.
1543	G. Guess	1221 N. 11th St.	Mrs. Vankirk	Satisfactory.
1544	J. W. Evans	1223 N. 11th St.	Mr. Shick	Bad.
1545	J. Boyd	1229 N. 11th St.	Mrs. Thorn	Satisfactory.
1546	John Madigan	1235 N. 11th St.	John Madigan	Satisfactory.
1547	G. Lanham	1405 N. 11th St.	G. Lanham	Satisfactory.
1548	S. E. Patterson	1413 N. 11th St.	S. E. Patterson	Bad.
1549	Dr. McCormick	1511 N. 11th St.	Dr. McCormick	Satisfactory.
1550	G. Learmouth	1631 N. 11th St.	Mr. Debruler	Satisfactory.
1551	Ross Draper	1645 N. 11th St.	Mr. Debruler	Satisfactory.
1552	Wm. Gatton	1659 N. 11th St.	Mr. Debruler	Satisfactory.
1553	R. H. Meehling	1119 Dewolf	R. H. Meehling	Bad.
1554	M. F. Rayburn	1634 Upper 11th St.	Mr. Beckens	Satisfactory.
1555	J. Howder	1630 Upper 11th	Mr. Debruler	Bad.
1556	H. Pettis	1633 Upper 11th	H. Pettis	Satisfactory.
1557	C. C. Colvin	1155 Dewolf St.	C. C. Colvin	Bad.
1558	J. Moheron	1642 N. 12th St.	Mr. Haries	Satisfactory.
1559	J. W. Pilgrims	1636 N. 12th St.	Mr. Haries	Satisfactory.
1560	Will Yates	1632 N. 12th St.	Mr. Cannon	Satisfactory.
1561	W. D. Maldsen	1627 Upper 11th	W. D. Maldsen	Satisfactory.
1562	J. S. Tumelson	1630 N. 12th St.	Mr. Cannon	Satisfactory.
1563	T. Hamilton	1624 N. 12th St.	Mr. Borden	Bad.
1564	Vacant	1521 N. 12th St.	Mr. Robertson	Satisfactory.
1565	Nancy Spunger	1627 N. 12th St.	Nancy Spunger	Satisfactory.
1566	M. Jacobs	1633 N. 12th St.	M. Jacobs	Bad.
1567	J. McHale, Jr.	1643 N. 12th St.	J. McHale, Jr.	Satisfactory.
1568	Wm. Blakely	1205 N. 12th St.	Mr. Johnson	Bad.
1569	Ed. Maxfield	1241 De Wolf	Ed. Maxfield	Satisfactory.
1570	S. C. Anderson	1648 N. 12th St.	S. C. Anderson	Bad.
1571	D. Melvin	1639 N. 13th St.	D. Melvin	Bad.
1572	R. R. Osborn	1641 N. 13th St.	Mr. Vandermark	Satisfactory.
1573	Pearl Moore	1647 N. 13th St.	Pearl Moore	Satisfactory.
1574	T. Slomson	1653 N. 13th St.	John Buckles	Satisfactory.
1575	H. Hawkes	1627 N. 14th St.	Mr. Henderson	Satisfactory.
1576	W. L. Wilson	414 Kewalt Ave.	W. L. Wilson	Doubtful.
1577	B. Emmons	1721 N. 13th St.	Mr. Buckler	Satisfactory.
1578	D. Tinkle	1715 N. 13th St.	D. Tinkle	Bad.
1579	M. Osborn	1709 N. 13th St.	M. Osborn	Bad.
1580	E. Malone	1704 N. 13th St.	E. Malone	Bad.
1581	J. Melvin	1703 N. 13th St.	J. Melvin	Doubtful.
1582	Mrs. Bouyre	1230 Dewolf St.	Mrs. Bouyre	Bad.
1583	John Ash	1712 N. 13th St.	John Ash	Satisfactory.
1584	Wm. Allagree	1718 N. 13th St.	Wm. Allagree	Doubtful.
1585	J. A. Johnson	1224 McKinley St.	J. McCormick	Satisfactory.
1586	B. C. Payne	1210 McKinley St.	Mr. Huner	Bad.
1587	J. T. Norris	1206 McKinley St.	J. T. Norris	Satisfactory.
1588	N. Mandabach	1206 McKinley St.	Mr. McCormick	Satisfactory.
1589	Vacant	1725 N. 12th St.	Mr. Nagle	Satisfactory.
1590	C. Willis	1723 N. 12th St.	Horace Hayes	Satisfactory.
1591	John Acres	1719 N. 12th St.	John Acres	Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1592	Sarah L. Fisher.	1711 N. 12th St.	Sarah L. Fisher.	Satisfactory.
1593	J. O. McCoy.	1707 Upper 11th.	J. O. McCoy.	Satisfactory.
1594	R. Griffith.	1713 Upper 11th St.	R. Griffith.	Satisfactory.
1595	F. Mullin.	1717 Upper 11th St.	Mr. Meyers.	Bad.
1596	Vacant.	1721 Upper 11th St.		Satisfactory.
1597	J. Maroney.	1164 McKinley St.	Mr. Vandermark.	Bad.
1598	Emma Sturgeon.	1166 McKinley St.	Mr. Vandermark.	Satisfactory.
1599	W. C. Phillips.	1172 McKinley St.	Mrs. Guess.	Bad.
1600	G. Thompson.	1120 McKinley St.	Mr. Ford.	Satisfactory.
1601	G. Sumner.	1863 Fanground St.	G. Sumner.	Satisfactory.
1602	F. Jordan.	1109 Tewalt St.	Dr. Held.	Bad.
1603	Tee Rael.	1115 Tewalt St.	Tee Rael.	Satisfactory.
1604	C. H. Monroe.	1153 Tewalt St.	C. H. Monroe.	Satisfactory.
1605	C. Fry.	1159 Tewalt St.	C. Fry.	Satisfactory.
1606	J. B. Jerauld.	1163 Tewalt St.	J. B. Jerauld.	Satisfactory.
1607	J. Parker.	1171 Tewalt St.	J. Parker.	Satisfactory.
1608	Tee Peek.	1205 Tewalt St.	Mr. Nagle.	Satisfactory.
1609	J. H. Summers.	1207 Tewalt St.	J. H. Summers.	Satisfactory.
1610	F. Ridgeway.	1211 Tewalt St.	W. B. Morris.	Bad.
1611	S. P. Banta.	1216 Tewalt St.	W. B. Morris.	Bad.
1612	Wm. Street.	1231 Tewalt St.	W. B. Morris.	Satisfactory.
1613	J. Slossen.	1302 Tewalt St.	J. Slossen.	Satisfactory.
1614	J. C. Flory.	1206 Tewalt St.	J. C. Flory.	Satisfactory.
1615	Mrs. C. Nash.	1202 Tewalt St.	Mr. Ruble.	Satisfactory.
1616	G. Smith.	1158 Tewalt St.	Mr. Folks.	Bad.
1617	Henry Mahan.	1152 Tewalt St.	Mr. Milligan.	Satisfactory.
1618	E. Twyman.	1151 Ridgeway.	W. H. Moore.	Satisfactory.
1619	P. Cotrell.	1157 Ridgeway.	Mr. McClure.	Satisfactory.
1620	F. Murphy.	1161 Ridgeway.	Mr. McClure.	Satisfactory.
1621	J. Fitzgerald.	1203 Ridgeway.	Mr. Sater.	Satisfactory.
1622	J. Burton.	1211 Ridgeway.	Mr. Sherman Wilson.	Satisfactory.
1623	H. Flora.	1223 Ridgeway.	Mr. Price.	Satisfactory.
1624	N. W. Cunick.	1227 Ridgeway.	N. W. Cunick.	Satisfactory.
1625	M. S. Wilks.	1331 Ridgeway.	Dr. A. B. De Priest.	Satisfactory.
1626	W. Goodrid.	1312 Ridgeway.	Mr. L. Meyers.	Bad.
1627	Ed. Fuller.	1228 Ridgeway.	Ed. Fuller.	Satisfactory.
1628	Roy Williams.	1212 Ridgeway.	Mr. Vandermark.	Satisfactory.
1629	J. Wall.	1204 Ridgeway.	J. Wall.	Satisfactory.
1630	G. Roberts.	1176 Ridgeway.	Mr. Heidenreich.	Satisfactory.
1631	M. Nicholson.	1116 Ridgeway.	M. Nicholson.	Satisfactory.
1632	A. L. Haartje.	2021 Fairground.	A. L. Haartje.	Satisfactory.
1633	W. Kimmel.	1115 Ritterskamp.	W. Kimmel.	Satisfactory.
1634	W. Atkinson.	1117 Ritterskamp.	Mr. Buitman.	Satisfactory.
1635	D. Bateman.	1119 Ritterskamp.	D. Bateman.	Satisfactory.
1636	J. Wall.	1203 Ritterskamp.	Sam McClure.	Satisfactory.
1637	Mr. Laswell.	1205 Ritterskamp.	Sam McClure.	Bad.
1638	F. Corlett.	1207 Ritterskamp.	Sam McClure.	Satisfactory.
1639	Vacant.	1209 Ritterskamp.	Sam McClure.	Satisfactory.
1640	I. C. Hill.	1217 Ritterskamp.	I. C. Hill.	Satisfactory.
1641	Floyd Bolan.	803 Emison.	Mr. Meyers.	Satisfactory.
1642	Wm. L. Fields.	809 Emison.	Mr. Meyers.	Bad.
1643	M. B. Hedrick.	813 Emison.	Mr. Borden.	Satisfactory.
1644	A. R. Parker.	823 Emison.	Mr. Clemmer.	Bad.
1645	W. T. Dailey.	825 Emison.	Mr. Borden.	Bad.
1646	Vacant.	827 Emison.	Mr. Borden.	Satisfactory.
1647	Mr. Powell.	831 Emison.	Mr. Borden.	Bad.
1648	J. D. Malone.	833 Emison.	Mr. Vaughn.	Satisfactory.
1649	E. E. Keefer.	835 Emison.	Mr. Borden.	Satisfactory.
1650	Vacant.	857 Emison.	Mr. Borden.	Satisfactory.
1651	J. S. Longest.	871 Emison.	J. S. Longest.	Satisfactory.
1652	J. F. Quarterman.	912 Emison.	Mr. Buckles.	Satisfactory.
1653	J. A. Morgan.	882 Emison.	J. A. Morgan.	Satisfactory.
1654	A. E. Knowles.	907 Emison.	A. E. Knowles.	Bad.
1655	C. M. Bowman.	870 Emison.	Mr. Brooksmith.	Bad.
1656	Vacant.	840 Emison.	Mr. Baden.	Bad.
1657	S. M. Hoffman.	854 Emison.	Mr. Meyers.	Satisfactory.
1658	C. Huffman.	836 Emison.	Mr. Clemmer.	Satisfactory.
1659	E. Adams.	834 Emison.	Mr. Lott.	Satisfactory.
1660	Mrs. J. Hobbs.	832 Emison.	G. W. Lott.	Bad.
1661	R. Smith.	830 Emison.	Miss Curtis.	Satisfactory.
1662	C. Salts.	826 Emison.	Jim Murphy.	Bad.
1663	Mrs. Beard.	822 Emison.	A. Shury.	Bad.
1664	J. Painter.	810 Emison.	J. Painter.	Satisfactory.
1665	C. Painter.	806 Emison.	Mr. Hamke.	Bad.
1666	Mrs. Hall.	Courtyard and Fairgrd.	Mrs. Hall.	Bad.
1667	Vacant.	1219 Ritterskamp.	Paul Brown.	Satisfactory.

TABLE No. 4—Continued.

Sample Number	Resident.	Address.	Owner of Property.	Remarks.
1668	L. Hurst	1221 Ritterskamp	L. Hurst	Satisfactory.
1669	S. Burch	1225 Ritterskamp	S. Burch	Satisfactory.
1670	Ed. J. Morgan	1305 Ritterskamp	Ed. J. Morgan	Bad.
1671	J. Bennet	1309 Ritterskamp	Mr. McCormick	Bad.
1672	Ed. Price	1316 Ritterskamp	Ed. Price	Bad.
1673	J. Lawles	1314 Ritterskamp	Mr. Carroll	Bad.
1674	Ebris, E.	1306 Ritterskamp	Dr. Hammond	Satisfactory.
1675	A. Walls	1300 Ritterskamp	Mr. Shide	Satisfactory.
1676	J. B. Wagoner	1214 Ritterskamp	J. B. Wagoner	Bad.
1677	J. M. Welton	1212 Ritterskamp	J. M. Welton	Satisfactory.
1678	J. D. Harbin	1206 Ritterskamp	Mr. Nansett	Satisfactory.
1679	Mrs. G. Sensena	2103 Fairground	Mr. Jackson	Satisfactory.
1680	Mrs. J. H. McWilliamson	1705 Fairground	Mr. Gibbs	Satisfactory.
1681	D. J. Jackson	1219 Fairground	Mr. Kesinger	Satisfactory.
1682	T. A. Helm	1225 Fairground	T. A. Helm	Satisfactory.
1683	S. Kirmiller	1237 Fairground	S. Kirmiller	Satisfactory.
1684	Mrs. Turner	1305 Fairground	Mrs. Turner	Satisfactory.
1685	Mr. Burton	1309 Fairground	Mrs. Turner	Satisfactory.
1686	Paul Curtner	1317 Fairground	Mr. McClure	Satisfactory.
1687	J. R. McClure	1323 Fairground	J. R. McClure	Satisfactory.
1688	Fred Orr	1403 Fairground	Pat Ryan	Satisfactory.
1689	W. A. Irvin	1417 Fairground	Pat Ryan	Doubtful.
1690	Mrs. H. Kappler	1423 Fairground	Pat Ryan	Satisfactory.
1691	Tom Thorn	1515 Fairground	Tom Thorn	Satisfactory.
1692	W. A. Hartman	1523 Fairground	Mrs. Jackson	Satisfactory.
1693	Orphans Home	1621 Fairground	County	Satisfactory.
1694	B. F. Sartor	1631 Fairground	B. F. Sartor	Satisfactory.
1695	E. C. Williams	1721 Fairground	Victor Manning	Satisfactory.
1696	Anna Graham	1718 Upper 11th	Mr. Ford	Satisfactory.
1697	Bert Woddell	1120 Dewolf	Mr. Stevenson	Satisfactory.
1698	John P. Lucas	1116 Dewolf	Mr. Mortor	Satisfactory.
1699	Asa Roberts	1110 Dewolf	W. F. Ferroll	Satisfactory.
1700	Q. W. Jones	1009 E. St. Clair	Mrs. Yeneoyne	Satisfactory.
1701	Emmie Olliphant	1015 St. Clair	Mrs. Jackson	Satisfactory.
1702	Mrs. Cogan	1014 E. Sycamore	Mrs. Cogan	Satisfactory.
1703	W. Law	913 Elm	P. G. Ryan	Satisfactory.
1704	Mr. Abel	917 Elm	P. G. Ryan	Satisfactory.
1705	Mr. Powers	921 Elm	P. G. Ryan	Satisfactory.
1706	M. Ryan	1007 Elm	M. Ryan	Bad.
1707	Mr. Robinson	1013 Elm	Mr. Jackson	Bad.
1708	Vacant	1019 Sycamore		Bad.
1709	G. Done	1014 Locust	G. Done	Satisfactory.
1710	O. L. Laughlin	1004 Locust	Mrs. Ryan	Satisfactory.
1711	G. W. Litu	1002 Locust	G. W. Litu	Satisfactory.
1712	W. H. Moore	922 Locust	W. H. Moore	Satisfactory.
1713	Nick Watson	916 Locust St.	Nick Watson	Bad.
1714	J. C. Brooks	914 Locust St.	Mr. Debruler	Satisfactory.
1715	J. L. Turk	915 Locust St.	J. L. Turk	Satisfactory.
1716	S. L. Goss	921 Locust St.	S. L. Goss	Satisfactory.
1717	R. M. Stafford	1001 Locust St.	Mr. Smith	Bad.
1718	Henry Martin	1005 Locust St.	H. Williams	Satisfactory.
1719	F. Elder	1011 Locust St.	F. Elder	Satisfactory.
1720	W. Lyons	1015 Locust St.	John Van Kirk	Bad.
1721	John Jackson	1002 Oak St.	John Jackson	Satisfactory.
1722	Mrs. S. Chapple	908 Oak St.	Mrs. S. Chapple	Satisfactory.
1723	J. C. B. Guess	902 Oak St.	J. C. B. Guess	Satisfactory.
1724	J. C. Hennon	907 Oak St.	Mr. Kirmiller	Satisfactory.
1725	John Meurer	911 Oak St.	Mr. Kirmiller	Satisfactory.
1726	C. Davis	917 Oak St.	Miss Thorn	Bad.
1727	C. G. Purvis	1011 Oak St.	Mrs. Wells	Bad.
1728	E. M. Nagle	1022 Wabash Ave	E. M. Nagle	Satisfactory.
1729	John Dryder	1016 Wabash Ave	John Dryder	Satisfactory.
1730	Mr. Beck	1008 Wabash Ave	Mr. Ryan	Satisfactory.
1731	M. H. Townsley	1004 Wabash Ave	M. H. Townsley	Satisfactory.
1732	G. Beeman	1215 N. 10th St.	G. Beeman	Satisfactory.
1733	A. A. Meyers	1219 N. 10th St.	A. A. Meyers	Satisfactory.
1734	C. M. Vennard	1231 N. 10th St.	C. M. Vennard	Satisfactory.
1735	A. Calender	1222 N. 10th St.	A. Calender	Satisfactory.
1736	J. Mills	1220 N. 10th St.	J. Roderick	Satisfactory.
1737	P. Rumer	1216 N. 10th St.	P. Rumer	Satisfactory.
1738	Mrs. Ballard	1212 N. 10th St.	Mr. C. Ballard	Satisfactory.
1739	F. Dilley	924 Wabash Ave	F. Dilley	Satisfactory.
1740	C. D. Connell	918 Wabash Ave	C. D. Connell	Satisfactory.
1741	Ed. Tobbert	914 Wabash Ave	Mrs. Connell	Bad.
1742	Vacant	910 Wabash Ave	Mr. Rumer	Satisfactory.
1743	Mr. Rutherford	904 Wabash Ave	Mr. Robinson	Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1744	J. M. Todd	1215 N. 9th St.	Mr. Gosnell.	Satisfactory.
1745	Mr. F. Sheeks	1223 N. 9th St.	F. Sheeks.	Satisfactory.
1746	J. C. Herron	1231 N. 9th St.	J. C. Herron.	Satisfactory.
1747	H. S. Joyce	1216 N. 9th St.	C. C. Gosnell.	Satisfactory.
1748	M. Shuler	1602 Fairground.	M. Shuler.	Satisfactory.
1749	J. E. Addams	1608 Fairground.	Mrs. Johnson.	Satisfactory.
1750	W. M. Johnson	1624 Fairground.	C. Smith.	Satisfactory.
1751	T. M. Dayson	1658 Fairground.	T. M. Dayson.	Satisfactory.
1752	Mrs. Scott	1664 Fairground.	Mrs. Scott.	Satisfactory.
1753	B. H. Pickett	1670 Fairground.	Mrs. Collison.	Satisfactory.
1754	Mrs. Patterson	1676 Fairground.	Mrs. Patterson.	Satisfactory.
1755	Vacant.	1708 Fairground.	Mrs. R. Ruddy.	Satisfactory.
1756	V. S. Manning	1820 Fairground.	V. S. Manning.	Satisfactory.
1757	Wm. Daffron	1824 Fairground.	Wm. Daffron.	Bad.
1758	S. Alliga	1828 Fairground.	S. Alliga.	Satisfactory.
1759	J. W. Ray	1904 Fairground.	J. W. Ray.	Bad.
1760	F. Foesmeyer	1928 Fairground.	F. Foesmeyer.	Satisfactory.
1761	C. E. Treese	1601 Indiana Ave.	C. E. Treese.	Satisfactory.
1762	R. E. Smith	1605 Indiana Ave.	R. E. Smith.	Satisfactory.
1763	L. Aubrey	1611 Indiana Ave.	Mrs. Je Cobus.	Satisfactory.
1764	O. Highfield	1621 Indiana Ave.	Fred Brooks.	Satisfactory.
1765	J. L. Howell	1651 Indiana Ave.	T. Wilks.	Satisfactory.
1766	T. Wilks	1657 Indiana Ave.	V. Farmer.	Satisfactory.
1767	V. Farmer	1661 Indiana Ave.	Knox Lumber Co.	Satisfactory.
1768	W. S. Kerr	1667 Indiana Ave.	E. Becker.	Satisfactory.
1769	W. Huffman	1702 Indiana Ave.	Mr. McWilliams.	Satisfactory.
1770	John Pfeiffer	1707 Indiana Ave.	T. Meyers.	Satisfactory.
1771	Bert Draine	1715 Indiana Ave.	Ed. Watson.	Satisfactory.
1772	W. Wiseman	1721 Indiana Ave.	J. E. Jones.	Satisfactory.
1773	J. E. Jones	1807 Indiana Ave.	Mr. Buckler.	Satisfactory.
1774	R. L. Reinhold	1813 Indiana Ave.	Mr. Borden.	Satisfactory.
1775	G. Beadles	1821 Indiana Ave.	G. Cavell.	Satisfactory.
1776	G. Cavell	1816 Indiana Ave.	Mr. Cutter.	Satisfactory.
1777	S. Austin	1808 Indiana Ave.	C. E. Everett.	Satisfactory.
1778	S. Davis	830 Carbon St.	Mr. Recker.	Satisfactory.
1779	Wm. McAuley	813 Carbon St.	E. Cooper.	Satisfactory.
1780	R. Cooper	817 Carbon St.	C. E. Everett.	Satisfactory.
1781	C. E. Everett	1704 Indiana Ave.	T. Lincoln.	Satisfactory.
1782	T. Lincoln	812 De Wolf St.	J. F. Smith.	Satisfactory.
1783	J. F. Smith	908 De Wolf St.	Mr. Borden.	Bad.
1784	G. Buley	806 De Wolf St.	Mr. Borden.	Satisfactory.
1785	A. Parr	805 De Wolf St.	Mr. Borden.	Bad.
1786	Vacant.	806 De Wolf St.	Mr. Parr.	Satisfactory.
1787	C. Bixler	1711 Mississippi	Mrs. M. Drain.	Satisfactory.
1788	Mrs. M. Drain	1672 Indiana Ave.	Dr. Jones.	Satisfactory.
1789	Mrs. Meyers	1666 Indiana Ave.	M. A. Miller.	Satisfactory.
1790	Margaret Miller	1662 Indiana Ave.	Mr. Carroll.	Satisfactory.
1791	B. Sullivan	1658 Indiana Ave.	H. Adams.	Satisfactory.
1792	A. White	1652 Indiana Ave.	L. Brooks.	Satisfactory.
1793	L. Brooks	1630 Indiana Ave.	L. Brooks & Son.	Satisfactory.
1794	L. Brooks & Son	806 St. Clair St.	M. Duetonberg.	Bad.
1795	Mr. Clifton	624 N. 2nd St.	W. Reep.	Satisfactory.
1796	J. P. Wilkerson	120 Hart St.	J. Kleindrick.	Bad.
1797	W. Reep	602 N. 2nd St.	L. Meyers.	Satisfactory.
1798	J. Kleindrick	601 1st and Hart	Mr. Purcell.	Satisfactory.
1799	J. N. Smiths	605 1st St.	Dr. Tade.	Bad.
1800	A. G. Tarr	609 N. 1st St.	Mr. Huffman.	Bad.
1801	S. Lance	17 Hart St.	J. Risch.	Bad.
1802	Emma Beeman	39 W. Hart St.	Ed. Newgin.	Bad.
1803	N. Malitaky	514 1st St.	W. Bushey.	Satisfactory.
1804	S. C. Clark	510 N. 1st St.	Jane Emerson.	Bad.
1805	J. Gyrmore	501 1st St.	Jane Emerson.	Bad.
1806	Ed. Newgin	103 Hart St.	Emma Acker.	Satisfactory.
1807	W. Bushey	519 1st St.	Mrs. Brocksmith.	Bad.
1808	H. Baldwin	515 N. 1st St.	J. E. Rogers.	Satisfactory.
1809	J. Birdlow	509 N. 1st St.	J. Rogers.	Satisfactory.
1810	Emma Acker	2 Seminary St.	Mr. Eaton.	Satisfactory.
1811	Mrs. Brocksmith	510 N. 2nd St.	S. A. Gauss.	Satisfactory.
1812	J. E. Rogers	506 N. 2nd St.	J. B. Young.	Satisfactory.
1813	Mr. Meyers	500 N. 2nd St.	J. E. Rogers.	Satisfactory.
1814	W. E. Fields	112 Seminary St.	John Huffman.	Satisfactory.
1815	S. A. Gauss	424 N. 2nd St.	Julia Graham.	Satisfactory.
1816	J. B. Young	420 N. 2nd St.		
1817	J. H. Towalt	418 N. 2nd St.		
1818	A. F. Hartman	406 N. 2nd St.		
1819	B. J. Gray	429 N. 1st St.		

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1820	F. R. Johnson	409 N. 1st St.	M. Campbell	Satisfactory.
1821	Geo. Mallory	112 Buntin St.	Mr. Jackson	Satisfactory.
1822	A. Anderson	309 N. 1st St.	John Bierhaus	Bad.
1823	M. H. Harman	119 Buntin St.	Mr. Grains	Bad.
1824	J. E. McCloskey	118 Broadway	J. E. McCloskey	Bad.
1825	C. B. O'Donnell	Cor. Buseron and 1st.	C. B. O'Donnell	Satisfactory.
1826	H. H. Hackleman	12 N. 2nd St.	H. H. Hackleman	Satisfactory.
1827	W. J. Bey	106 Main St.	W. J. Bey	Satisfactory.
1828	Flint Department Co.	101 Main St.	Dflint Department Store.	Bad.
1829	Flint Department Co.	101 Main St.	Flint Department Store.	Satisfactory.
1830	M. McClure	19 S. 2nd St.	Mr. Copps	Satisfactory.
1831	R. F. Moore	29 S. 2nd St.	The Moose Lodge	Bad.
1832	Mrs. Braydon	103 S. 2nd St.	Catholic's Congregation.	Satisfactory.
1833	Mr. Griffith	105 S. 2nd St.	Catholic's Congregation.	Satisfactory.
1834	Wm. Griffith	111 S. 2nd St.	Catholic's Congregation.	Satisfactory.
1835	Paul Coon Co.	1st and Barnett	Paul Coon and Co.	Bad.
1836	A. Pettijohn	313 S. 1st St.	A. Pettijohn	Satisfactory.
1837	Mr. Eagle	1st and Dubois	Mr. Huner	Bad.
1838	J. DeCamp	120 Dubois St.	Jane Emerson	Satisfactory.
1839	C. Ottenmeyer	123 Dubois St.	C. Ottenmeyer	Satisfactory.
1840	E. Truitt	303 S. 2nd St.	E. Truitt	Satisfactory.
1841	Knox Lumber Co.	1st and Hart	Knox Lumber Co.	Satisfactory.
1842	Minnie Ledgwood	617 N. 2nd St.	L. B. Smith	Bad.
1843	Mr. Brocksmith	619 N. 2nd St.	L. B. Smith	Satisfactory.
1844	P. B. Burns	607 N. 2nd St.	L. B. Smith	Bad.
1845	Miss S. Busse	521 N. 2nd St.	Judge Cobb	Bad.
1846	Vacant	511 N. 2nd St.	Mrs. Meters	Satisfactory.
1847	A. Schory	427 N. 2nd St.	Al Schory	Satisfactory.
1848	J. C. Hents	425 N. 2nd St.	J. C. Hents	Satisfactory.
1849	R. C. Quiler	212 Perry St.	Mrs. Sertel	Satisfactory.
1850	J. G. McClure	328 N. 3rd St.	J. B. Laplante	Satisfactory.
1851	O. Geese	307 N. 2nd St.	O. Geese	Satisfactory.
1852	W. J. Kyger	212 Buseron St.	Fred Maroni	Satisfactory.
1853	Mr. Hayes	112 N. 3rd St.	C. Laplante	Bad.
1854	T. Goodare	114 N. 3rd St.	E. Laplante	Satisfactory.
1855	J. Evans	120 N. 3rd St.	J. Bevort	Bad.
1856	H. E. Emison	204 N. 3rd St.	Mrs. Moore	Satisfactory.
1857	G. Roden	304 N. 3rd St.	Mr. Laplante	Bad.
1858	B. B. Davis	318 N. 3rd St.	Mr. Laplante	Bad.
1859	C. V. Crotts	216 Perry St.	C. V. Crotts	Satisfactory.
1860	Ida Byers	220 Perry St.	Ida Byers	Satisfactory.
1861	Mr. Williamson	439 N. 3rd St.	Mr. Williamson	Bad.
1862	H. S. Cauthorn	506 N. 3rd St.	H. S. Cauthorn	Bad.
1863	J. T. McJimesy	326 Hart St.	J. T. McJimesy	Bad.
1864	Mary Knirihm	612 N. 3rd St.	Mary Knirihm	Satisfactory.
1865	W. Wagner	622 N. 3rd St.	Ella Hackman	Satisfactory.
1866	P. Marchino	623 N. 3rd St.	P. Marchino	Bad.
1867	A. M. Shepherd	429 N. 3rd St.	A. M. Shepherd	Satisfactory.
1868	Mrs. Beach	413 N. 3rd St.	Mrs. Beach	Bad.
1869	J. C. Murphy	411 N. 3rd St.	Mr. Becker	Satisfactory.
1870	Mrs. J. J. Dawson	302 Broadway	Mrs. J. J. Dawson	Satisfactory.
1871	C. O. Harper	109 N. 3rd St.	Joseph Gimble-Coon	Satisfactory.
1872	G. W. Grader	104 N. 4th St.	G. W. Grader	Satisfactory.
1873	Mrs. Willman	120 N. 4th St.	G. W. Grader	Satisfactory.
1874	Miss M. McWhirter	315 Broadway	Miss McWhirter	Bad.
1875	J. P. L. Weems	222 N. 4th St.	J. P. L. Weems	Bad.
1876	M. Moran	316 N. 4th St.	Mr. Weisert	Bad.
1877	A. J. Padgett	420 N. 4th St.	A. J. Padgett	Satisfactory.
1878	F. Oliphant	424 N. 4th St.	F. Oliphant	Satisfactory.
1879	J. T. Oliphant	430 N. 4th St.	J. T. Oliphant	Satisfactory.
1880	E. W. Dryman	528 N. 4th St.	E. W. Dryman	Satisfactory.
1881	G. L. Ruddy	318 Hart St.	G. L. Ruddy	Satisfactory.
1882	W. Zuber	328 Hart St.	W. Zuber	Satisfactory.
1883	C. B. Dowell	612 N. 4th St.	Miss Weems	Satisfactory.
1884	J. S. Surbaugh	614 N. 4th St.	Miss G. Sumner	Satisfactory.
1885	Dr. Maxedon	622 N. 4th St.	Dr. Maxedon	Satisfactory.
1886	J. M. Potter	609 N. 4th St.	J. M. Potter	Satisfactory.
1887	E. Hartman	513 N. 4th St.	E. Hartman	Satisfactory.
1888	Emma Elnere	503 N. 4th St.	Emma Elnere	Satisfactory.
1889	Mrs. Samonial	431 N. 4th St.	Mrs. Samonial	Satisfactory.
1890	F. Franke	417 N. 4th St.	F. Franke	Satisfactory.
1891	Jim Emison	411 N. 4th St.	Jim Emison	Satisfactory.
1892	W. C. Mason	319 N. 4th St.	W. C. Mason	Satisfactory.
1893	D. C. Boggs	309 N. 4th St.	Dr. Moore	Satisfactory.
1894	Mrs. E. G. Loten	19 N. 4th St.	Mrs. Loten	Satisfactory.
1895	Vincennes University	5th and Buseron		Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1896	Dr. G. A. Rielmeier	430 Broadway	Dr. Reilmeier	Satisfactory.
1897	T. K. Willis	216 N. 5th St.	Will Heibane	Satisfactory.
1898	Knapp Sanitorium			Satisfactory.
1899	B. F. Nesbit	417 Buntin St.	B. F. Nesbit	Satisfactory.
1900	G. W. Donaldson	222 N. 5th St.	G. W. Donaldson	Satisfactory.
1901	P. O. Ritterkamp	306 N. 5th St.	P. O. Ritterkamp	Satisfactory.
1902	R. M. Glass	429 Perry St.	R. M. Glass	Satisfactory.
1903	H. A. Oliphant	418 N. 5th St.	H. A. Oliphant	Satisfactory.
1904	John Wilhelm	428 N. 5th St.	John Wilhelm	Satisfactory.
1905	Otto Wagner	412 Hart St.	Otto Wagner	Satisfactory.
1906	J. H. Overbag	602 N. 5th St.	Evangelical	Satisfactory.
1907	Mrs. C. J. McCord	504 Hart St.	Mrs. C. J. McCord	Satisfactory.
1908	J. W. Emison	521 N. 5th St.	J. W. Emison	Satisfactory.
1909	R. H. Wallace	515 N. 5th St.	R. H. Wallace	Bad.
1910	E. A. Ritterkamp	506 N. 5th St.	E. A. Ritterkamp	Satisfactory.
1911	J. R. Alsop	223 N. 5th St.	J. R. Alsop	Satisfactory.
1912	W. J. Heberd	508 Broadway	W. J. Heberd	Satisfactory.
1913	R. L. Bond	502 Broadway	R. L. Bond	Satisfactory.
1914	Sam Lyons	505 Broadway	Sam Lyons	Satisfactory.
1915	Blanch Bend Art Store	514 Main	Mr. Eberwine	Bad.
1916	R. E. Purcell	527 Buseron	R. E. Purcell	Satisfactory.
1917	W. P. Ritterkamp	216 N. 6th St.	W. P. Ritterkamp	Satisfactory.
1918	J. C. Smith	517 Buntin St.	J. C. Smith	Satisfactory.
1919	C. S. Miller	322 N. 6th St.	C. S. Miller	Satisfactory.
1920	I. W. Neiss	404 N. 6th St.	M. Glass	Satisfactory.
1921	W. Bierhaus	Seminary and 6th.	W. Bierhaus	Satisfactory.
1922	D. A. Oestreicher	506 Hart St.	D. A. Oestreicher	Bad.
1923	Mrs. H. Johnson	510 Hart St.	Fred Ritterkamp	Satisfactory.
1924	A. W. Pringlee	612 N. 6th St.	A. W. Pringlee	Satisfactory.
1925	J. D. Hogue	515 N. 6th St.	J. D. Hogue	Satisfactory.
1926	J. L. Bayard	505 N. 6th St.	J. L. Bayard	Satisfactory.
1927	H. G. Harding	421 N. 6th St.	H. G. Harding	Satisfactory.
1928	D. D. Aldridge	415 N. 6th St.	D. D. Aldridge	Satisfactory.
1929	W. French	407 N. 6th St.	Mr. Joe Kimmel	Satisfactory.
1930	L. C. Summitt	618 Broadway	L. C. Summitt	Bad.
1931	A. De Priest	206 7th St.	A. De Priest	Satisfactory.
1932	2nd Hand Hardware Co	Buntin and 7th		Satisfactory.
1933	Mrs. L. Beckes	619 Buntin St.	Mrs. Beckes	Satisfactory.
1934	Mrs. A. Clark	506 N. 7th St.	Mrs. A. Clark	Satisfactory.
1935	J. L. Buckles	528 N. 7th St.	J. L. Buckles	Satisfactory.
1936	J. L. Ryan	614 N. 7th St.	J. L. Ryan	Satisfactory.
1937	Hall Brothers	7th and Perry	Hall Brothers	Satisfactory.
1938	Mrs. E. Bierhaus	103 N. 6th St.	Mrs. E. Bierhaus	Satisfactory.
1939	M. B. Strickland	628 Main St.	Mr. Krennauer	Satisfactory.
1940	Planke Brothers	7th and Buseron	Planke Brothers	Satisfactory.
1941	Vacant	617 Buseron St.		Bad.
1942	Dr. H. W. Held	613 Buseron St.	Dr. Jessup	Satisfactory.
1943	E. H. Buck	603 Buseron St.	C. G. Mathene	Satisfactory.
1944	W. C. Watjen	15 N. 6th St.	W. C. Watjen	Satisfactory.
1945	John Downey	609 Main St.	John Downey	Satisfactory.
1946	P. Tindolph	617 Main St.	P. Tindolph	Bad.
1947	R. M. Robinson	19 S. 7th St.	R. M. Robinson	Satisfactory.
1948	Mr. Schaffer	33 S. 7th St.	Mr. Schaffer	Satisfactory.
1949	Mrs. G. Downey	103 S. 7th St.	Mrs. G. Downey	Satisfactory.
1950	C. Stusel	107 S. 7th St.	Mrs. McWhirter	Satisfactory.
1951	Prof. Halton	113 S. 7th St.	Miss E. Davison	Satisfactory.
1952	Aubrey's Saloon	Church and 7th	Joe Fry	Bad.
1953	J. M. Johnson	330 Barnett	Mr. Crook	Satisfactory.
1954	J. Halter	303 S. 7th St.	J. Halter	Bad.
1955	M. Halter	311 S. 7th St.	M. Halter	Bad.
1956	Jim Southerland	621 Dubois	Mr. Brant	Satisfactory.
1957	H. Becker	409 S. 7th St.	Mr. Brant	Satisfactory.
1958	L. Kiefer	413 S. 7th St.	Mrs. Bergman	Satisfactory.
1959	Kate Cramer	425 S. 7th St.	Mrs. Berger	Bad.
1960	Emma Borrys	627 Nicholas St.	Emma Borrys	Bad.
1961	J. Schaffer	14 S. 6th St.	Mr. Spiker	Bad.
1962	B. Fowler	110 S. 6th St.	Mr. Duenterberg	Satisfactory.
1963	J. A. Miller	102-45 6th St.	J. A. Miller	Satisfactory.
1964	P. Behufers	604 Church St.	George Folks	Satisfactory.
1965	P. Aubrey	621 Church St.	Miss Terhar	Satisfactory.
1966	Mrs. Terhar	617 Church St.	Mrs. Terhar	Satisfactory.
1967	F. Blome	613 Church St.	Mrs. Terhar	Bad.
1968	H. Watson	609 Church St.	H. Watson	Satisfactory.
1969	Mrs. Reinbold	605-7 Church St.	Mrs. Reinbold	Satisfactory.
1970	J. Elkins	220 S. 6th St.	Mr. Zeddel	Satisfactory.
1971	J. I. Muentzer	226 S. 6th St.	J. I. Muentzer	Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
1972	M. Zaeffel	614 Barnett St.	M. Zaeffel	Satisfactory.
1973	C. Hartman	622 Barnett St.		Satisfactory.
1974	W. C. Carter	613 Barnett St.	Mrs. Dorn	Satisfactory.
1975	Mrs. Duesterberg	614 D'hom St.	Mrs. Duesterberg	Satisfactory.
1976	Mrs. J. Caney	3145 S. 6th St.	Mrs. J. Caney	Satisfactory.
1977	J. Reymass	619 Dubois St.	J. Reymass	Bad.
1978	O. Althof	611 Dubois St.		Satisfactory.
1979	P. Kiefer	605 Dubois St.	P. Kiefer	Satisfactory.
1980	J. Delisle	621 Nicholas St.	J. Delisle	Satisfactory.
1981	Mrs. Halter	613 Nicholas St.	Mrs. Halter	Satisfactory.
1982	Mrs. C. Boyer	619 Nicholas St.	M. K. Thomas	Satisfactory.
1983	L. M. Glass	605 Nicholas St.	L. M. Glass	Satisfactory.
1984	W. B. Kirk	516 S. 6th St.	Mr. Glas	Satisfactory.
1985	Mrs. Delisle	520 S. 6th St.	Mrs. Delisle	Satisfactory.
1986	A. E. Kiefer	522 S. 6th St.	A. E. Kiefer	Satisfactory.
1987	Mrs. Russmaide	612 Bayou	Building and Loan.	Satisfactory.
1988	J. Muckinsturm	614 Bayou	J. Muckinsturm	Satisfactory.
1989	R. Heischelman	624 Bayou	Mumidy	Satisfactory.
1990	A. Ranier	606 S. 6th St.	Miss Grey	Satisfactory.
1991	J. Kare	618 S. 6th St.	Miss McClure	Satisfactory.
1992	J. Theriae	622 S. 6th St.	J. Theriae	Satisfactory.
1993	M. Mooney	624 S. 6th St.	Mrs. Moming	Satisfactory.
1994	R. Whetstin	612 Prairie	Miss L. Moming	Satisfactory.
1995	George Briggs	618 Prairie	J. F. Miller	Satisfactory.
1996	C. Paige	635 Prairie	Building and Loan.	Satisfactory.
1997	L. Martin	626 S. 7th St.	Wm. Balk	Satisfactory.
1998	P. Bogard	625 Prairie	Mr. Delyurea	Satisfactory.
1999	O. Walker	615 Prairie	Mr. Delyurea	Satisfactory.
2000	Wm. Themm	611 Prairie	Mr. Delyurea	Bad.
2001	German National Bank	2nd and Main.	German National Bank	Satisfactory.
2002	Mrs. Kapps	307 S. 2nd St.	Mrs. Kapps	Satisfactory.
2003	G. V. List	311 S. 2nd St.	G. V. List	Bad.
2004	Mrs. Love	401 S. 2nd St.	Mrs. Love	Satisfactory.
2005	H. R. Graham	421 S. 2nd St.	Lawyer Reems	Bad.
2006	Mae Ralson	117 Nicholas St.	Mrs. Cobb	Satisfactory.
2007	L. French	121 Nicholas St.	Dr. Decker	Satisfactory.
2008	E. P. Stewart	127 Nicholas St.	E. P. Stewart	Satisfactory.
2009	M. Lynch	511 S. 2nd St.	Mr. Eagle	Satisfactory.
2010	J. Cleveland	513 S. 2nd St.	J. Cleveland	Satisfactory.
2011	Wm. Embry	515 S. 2nd St.	Wm. Embry	Satisfactory.
2012	G. Sturgeon	526 S. 2nd St.	Mr. Gardner	Satisfactory.
2013	Amos Lee	518 S. 2nd St.	Mr. Cooley	Satisfactory.
2014	Wm. Cobb	512 S. 2nd St.	Wm. Cobb	Satisfactory.
2015	Ed. Dillinger	205 Nicholas St.	Mr. Buckles	Satisfactory.
2016	Mr. W. Kail	424 S. 2nd St.	Mr. W. Kail	Satisfactory.
2017	John Bay	404 S. 2nd St.	John Bay	Satisfactory.
2018	Mrs. Tevalt	202 Dubois St.	G. Schmidt	Bad.
2019	Catholic School	Church St.	Catholic School	Satisfactory.
2020	F. Thuis	17 S. 3rd St.	F. Thuis	Bad.
2021	J. Yount	225 S. 3rd St.	M. Emison	Satisfactory.
2022	R. Companion	303 S. 3rd St.		Satisfactory.
2023	A. W. Knox	313 S. 3rd St.	Tom Henderson	Satisfactory.
2024	J. Phillips	403 S. 3rd St.	Schats	Satisfactory.
2025	B. Marchino	305 Nicholas St.	B. Marchino	Satisfactory.
2026	J. Clay	519 S. 3rd St.	Mr. Weiser	Satisfactory.
2027	Mrs. Soudriette	523 S. 3rd St.	Mrs. Soudriette	Satisfactory.
2028	Cora Wilson	526 S. 3rd St.	E. G. Gardner	Satisfactory.
2029	Ed. Morten	529 S. 3rd St.	Mr. Whitney	Satisfactory.
2030	W. Buchanan	533 S. 3rd St.	Mr. Whitney	Satisfactory.
2031	C. B. Dicus	528 S. 3rd St.	Mr. Meyers	Satisfactory.
2032	S. J. Hall	524 S. 3rd St.	Mr. Montgomery	Satisfactory.
2033	Ruthard Wille	520 S. 3rd St.	Mr. Wille	Satisfactory.
2034	H. Bushing	514 S. 3rd St.	H. Bushing	Satisfactory.
2035	J. Hartel	309 Nicholson	J. Hartel	Satisfactory.
2036	Mrs. Meyers	314 S. 3rd St.	Mrs. Meyers	Satisfactory.
2037	Joe Kitchel	219 S. 4th St.	Mrs. Loton	Satisfactory.
2038	Mrs. A. Kapps	207 S. 4th St.	Mrs. A. Kapps	Satisfactory.
2039	L. M. Hitt	310 Church St.	L. M. Hitt	Satisfactory.
2040	R. Gines	113 S. 4th St.	Mrs. Graider	Satisfactory.
2041	H. Brokhage & Son	317 Main St.		Bad.
2042	Fire Station, H. Q	South 4th St.	City	Bad.
2043	John Leakman	23 South 4th St	Hall & Leakman	Satisfactory.
2044	Ed. Tongaw	312 Vigo St.	Ed. Tongaw	Satisfactory.
2045	F. L. Neideffer	315 Vigo St.	F. L. Neideffer	Satisfactory.
2046	Chas. Cline	103 S. 4th St.	Chas. Cline	Satisfactory.
2047	Joe Cline	409 Church St.	Joe Cline	Satisfactory.



TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2048	F. M. Bear	236 S. 4th St.	George Foulks	Satisfactory.
2049	L. Graham	415 S. 4th St.	A. J. Friend	Satisfactory.
2050	A. J. Friend	323 Dubois St.	A. J. Friend	Satisfactory.
2051	Chas. Miller	313 Dubois St.	A. J. Friend	Satisfactory.
2052	Ed. Harge	325 Dubois St.	Alice Castle	Bad.
2053	J. Butman	343 Dubois St.	A. J. Castle	Satisfactory.
2054	Belle English	318 Nicholas St.	John Locrax	Satisfactory.
2055	Wilhemina Annahouse	425 4th St.	W. Annahouse	Satisfactory.
2056	A. L. Morgan	501 S. 4th St.	John Recker	Satisfactory.
2057	Les Dresman	505 S. 4th St.	John Recker	Bad.
2058	John Nunley	509 S. 4th St.	Mrs. Connerly	Satisfactory.
2059	F. W. Holman	527 S. 4th St.	P. W. Holman	Bad.
2060	August Depree	531 S. 4th St.	August Depree	Bad.
2061	Matthew Embrey	533 S. 4th St.		Satisfactory.
2062	Julia Dubois	322 Bayou St.	Julia Dubois	Bad.
2063	W. E. Hurst	327 Bayou St.	W. H. Prokes	Satisfactory.
2064	A. B. Broulette	317 Bayou St.	A. B. Broulette	Satisfactory.
2065	John Clinton	315 Bayou St.	Ray Clinton	Satisfactory.
2066	Joe Massey	412 Willow St.	Building and Loan	Bad.
2067	J. N. Neighbors	407 Bayou St.	Building and Loan	Bad.
2068	Chas. Soudriette	411 Bayou St.	Louis Meyers	Bad.
2069	E. Bushing	410 Bayou St.	Margaret Phillips	Satisfactory.
2070	H. E. Wagner	530 S. 4th St.	Care Mr. Lott	Satisfactory.
2071	George Nash	South 4th St.	George Nash	Satisfactory.
2072	Louise Jordan	518 S. 4th St.	Louise Jordan	Satisfactory.
2073	J. Moan	514 S. 4th St.	Mr. Capps	Satisfactory.
2074	W. N. Tarley	510 S. 4th St.	John Capps	Satisfactory.
2075	Roger Phillips	403 S. 4th St.	John Capps	Satisfactory.
2076	Mage Garden	419 Nicholas St.	Mage Garden	Bad.
2077	John Mueller	410 Nicholas St.	John Mueller	Satisfactory.
2078	Sophia Waylor	401 Dubois St.	Sophia Waylor	Satisfactory.
2079	Maggie Connerly	413 Dubois St.	Maggie Connerly	Satisfactory.
2080	R. Watson	403 S. 5th St.	R. Watson	Bad.
2081	Walk-Over Boot Shop	Main Street		Bad.
2082	Caroline Ostendorf	403 Vigo St.	Caroline Ostendorf	Satisfactory.
2083	Mrs. Mary Orr	114 S. 4th St.	Mrs. Mary Orr	Satisfactory.
2084	Stephen Arnold	428 Church St.	Stephen Arnold	Satisfactory.
2085	Mr. Davis	421 Church St.		Satisfactory.
2086	Frank Horsting	425 Church St.	Frank Horsting	Satisfactory.
2087	I. N. Henderson	219 S. 5th St.	I. N. Henderson	Satisfactory.
2088	Mrs. Wilmore	223 S. 5th St.	Mrs. Wilmore	Satisfactory.
2089	Jack Thompson	418 Barnett St.	Mary Blatherwick	Bad.
2090	Mrs. A. Donnel	409 S. 5th St.	Mrs. A. Donnel	Satisfactory.
2091	Chas. Bartholomew	419 S. 5th St.	Judge Cobb	Satisfactory.
2092	J. E. Bridges	421 S. 5th St.	O. H. Cobb	Satisfactory.
2093	L. A. Brokhage	427 Nicholas St.	L. A. Brokhage	Satisfactory.
2094	John Bunhomme	517 S. 5th St.	John Bunhomme	Satisfactory.
2095	Will Ballard	521 S. 5th St.	Will Ballard	Satisfactory.
2096	Chas. Livenaugh	525 S. 5th St.	Chas. Livenaugh	Satisfactory.
2097	F. Lambotte	520 S. 5th St.	Mr. Brokhage	Bad.
2098	Albert Wathen	414 Bayou St.	Mr. Brokhage	Satisfactory.
2099	C. E. Brockhart	413 Bayou St.	L. A. Myers	Satisfactory.
2100	Wm. Bouchie	421 Bayou St.	L. A. Myers	Satisfactory.
2101	Julian Fritch	425 Bayou St.	Mrs. Jordan	Satisfactory.
2102	Joe Leonard	615 5th St.	Dr. C. E. Stewart	Satisfactory.
2103	George Ridgeley	625 S. 5th St.	Mr. Monomie	Satisfactory.
2104	Ben Vatchett	628 S. 5th St.	Ben Vatchett	Satisfactory.
2105	Fannie Edwards	622 S. 5th St.	Fannie Edwards	Bad.
2106	Harry Williams	614 S. 5th St.	Harry Williams	Satisfactory.
2107	Mary Monroe	610 S. 5th St.	Mary Monroe	Satisfactory.
2108	Fred Dunkle	602 S. 5th St.	John Broyle	Bad.
2109	Ed. Maidlow	520 Bayou St.	Mr. Brokhage	Satisfactory.
2110	John Harth	514 Bayou St.	Mr. Brokhage	Satisfactory.
2111	Chas. Mustin	510 Bayou St.	Mr. Brokhage	Satisfactory.
2112	Cary Faugh	528 S. 5th St.	Brid & Broulette	Satisfactory.
2113	Mr. Broulette	526 S. 5th St.	Mr. Broulette	Satisfactory.
2114	S. Bortman	— S. 5th St.	Mr. Brokhage	Satisfactory.
2115	L. E. Hall	512 S. 5th St.	Mr. Brokhage	Bad.
2116	Mrs. H. Brokhage	502 S. 5th St.	Mrs. Brokhage	Satisfactory.
2117	Henry Godare	509 Nicholas St.	Mr. Brokhage	Satisfactory.
2118	Henry Lacoete	514 Nicholas St.	Henry Lacoete	Satisfactory.
2119	Louis Botman	426 S. 5th St.	Mr. Bouchie	Satisfactory.
2120	J. Weisenbaugh	— S. 5th St.	J. Weisenbaugh	Satisfactory.
2121	Bert Bedeweg	417 Vigo Street	Mrs. Muckersturm	Satisfactory.
2122	F. Boone	421 Vigo Street	Mrs. Muckersturm	Satisfactory.
2123	F. Kramer	427 Vigo Street	F. Kramer	Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2124	Julia Erchbasch.	222 S. 5th St.	Julia Erchbasch.	Bad.
2125	Tracy Landers	226 S. 5th St.	Tracy Landers	Satisfactory.
2126	Mary Kelley	308 S. 5th St.	Mary Kelley	Bad.
2127	Jas. Lawson	517 Nicholas St.	Jas. Lawson	Satisfactory.
2128	Alex. Burnway	521 Nicholas St.	Mr. Brockhage	Satisfactory.
2129	Thos. Therioc	501 S. 6th St.	Thos. Therioc	Satisfactory.
2130	M. Therioc	513 S. 6th St.	M. Therioc	Satisfactory.
2131	J. Swartsman	519 S. 6th St.	Mr. Brockhage	Satisfactory.
2132	F. Pivon	521 S. 6th St.	Mr. Brockhage	Satisfactory.
2133	Ben Allen	525 S. 6th St.	Mr. Brockhage	Satisfactory.
2134	John Bastin	527 S. 6th St.	Mr. Brockhage	Satisfactory.
2135	J. Grimean	603 S. 6th St.	J. Grimean	Satisfactory.
2136	Dr. Curtner	607 S. 6th St.	Mrs. Goosen	Satisfactory.
2137	Jules Marshall	611 S. 6th St.	Mrs. Goosen	Satisfactory.
2138	L. Bensing	625 S. 6th St.	Mrs. O. Donell	Bad.
2139	Robt. Johnson	627 S. 6th St.	Robt. Johnson	Satisfactory.
2140	Peter Deleria	631 S. 6th St.	Peter Deleria	Satisfactory.
2141	N. C. Reglin	633 S. 6th St.	Mrs. Utt	Satisfactory.
2142	George Briggs	618 Prairie St.	J. F. Miller	Satisfactory.
2143	J. Clark	631 S. 7th St.	J. F. Miller	Satisfactory.
2144		623 S. 7th St.	J. F. Miller	Satisfactory.
2145	E. Hanks	617 S. 7th St.	J. F. Miller	Satisfactory.
2146	C. Skinner	615 S. 7th St.	J. F. Miller	Satisfactory.
2147	Wm. Kassens	601 S. 7th St.	Wm. Kassens	Satisfactory.
2148	Joe Halter	529 S. 7th St.	Joe Halter	Satisfactory.
2149	J. Brassen	525 S. 7th St.	Joe Cobbe	Satisfactory.
2150	Chas. Mayer	519 S. 7th St.	Chas. Mayer	Satisfactory.
2151	F. Kappe	507 S. 7th St.	F. Kappe	Satisfactory.
2152	F. Vachett	518 Nicholas	F. Vachett	Satisfactory.
2153	P. Boyer	522 Nicholas	Joe Watson	Bad.
2154	S. Bouchie Saloon	423 S. 6th St.	S. Bouchie	Satisfactory.
2155	Jas. Bouchie	419 S. 6th St.	Jas. Bouchie	Satisfactory.
2156	Thos. La Nellet	403 S. 6th St.	Thos. La Nellet	Satisfactory.
2157	Price	519 Dubois St.	Mr. Foulkes	Satisfactory.
2158	F. E. Lorch	303 S. 6th St.	Mrs. Joe Soudon	Satisfactory.
2159	Ben Dueterberg	518 Barnett St.	Ben Dueterberg	Satisfactory.
2160	J. E. Branch	231 S. 6th St.	J. E. Branch	Satisfactory.
2161	Bosworth Lumber Co.	32 S. 5th St.	Bosworth Lumber Co.	Satisfactory.
2162	T. I. Bailey	102 S. 5th St.	T. I. Bailey	Satisfactory.
2163	J. P. Green	108 S. 5th St.	T. I. Bailey	Satisfactory.
2164	Mrs. Vachett	506 Church St.	T. I. Bailey	Bad.
2165	C. Goodwin	514 Church St.	T. I. Bailey	Satisfactory.
2166	Frank Darg	513 Church St.	H. B. Dueterberg	Satisfactory.
2167	H. B. Dueterberg	211 S. 6th St.	G. H. Dueterberg	Satisfactory.
2168	G. H. Dueterberg	117 S. 6th St.	Frank Halter	Satisfactory.
2169	Thos. Dubois	223 S. 6th St.	Ed. Brandt	Satisfactory.
2170	John Drake	529 Vigo St.	Frank Halter	Satisfactory.
2171	M. F. Hoffman	23 S. 6th St.	Estate of Thurgood	Satisfactory.
2172	Grace Thurgood	527 Main St.	Bremmer House (Saloon)	Satisfactory.
2173	Bremmer House	517 Main St.	Y. M. C. A.	Satisfactory.
2174	M. T. Johnson	718 Main St.	E. Baker	Satisfactory.
2175	E. Baker	707 Buseron St.	John Bierhaus	Satisfactory.
2176	John Bierhaus	Main Street	Knox County	Satisfactory.
2177	Knox County Court House	708 Broadway	Frank Ritter	Satisfactory.
2178	Frank Ritter	707 Buntin St.	W. H. Hill	Satisfactory.
2179	W. H. Hill	715 Buntin St.	J. T. Scott	Satisfactory.
2180	J. T. Scott	311 N. 7th St.	Mrs. Meyers	Satisfactory.
2181	Mrs. Fred Myers	403 N. 7th St.	J. J. Robbins	Bad.
2182	J. J. Robbins	415 N. 7th St.	Henry Hall	Satisfactory.
2183	Henry Hall	421 N. 7th St.	Lucinda Clark	Satisfactory.
2184	Vacant	Seminary St.	L. Clark	Satisfactory.
2185	C. W. Lanbroy	509 7th St.	Lissie Hall	Satisfactory.
2186	L. Clark	519 N. 7th St.	John Shoults	Satisfactory.
2187	Lissie Hall	523 N. 7th St.	W. J. Weisenberger	Satisfactory.
2188	Benders Bakery	617 N. 7th St.	W. J. Weisenberger	Bad.
2189	H. B. Shively	619 N. 7th St.	E. Whitcher	Satisfactory.
2190	L. J. Pulliam	622 N. 8th St.	Mrs. McClure	Satisfactory.
2191	Vacant	618 N. 8th St.	Frank Webber	Satisfactory.
2192	E. Whitcher	610 N. 8th St.	J. H. Shulcer	Satisfactory.
2193	John Rents	608 N. 8th St.	A. F. Kidd	Satisfactory.
2194	Frank Webber	604 N. 8th St.	Amanda Mathesia	Satisfactory.
2195	J. H. Schulcer	520 N. 8th St.	Gardner heirs	Satisfactory.
2196	A. F. Kidd	514 N. 8th St.	C. H. Mayer	Satisfactory.
2197	Green Benington	504 N. 8th St.		
2198	A. R. White	719 Seminary		
2199	C. H. Mayer			

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2200	J. S. Branton.	729 Seminary	J. S. Branton.	Bad.
2201	Mary Kennedy.	738 Perry St.	Mary Kennedy.	Satisfactory.
2202	Jas. A. McClare.	720 Perry St.	Dr. Moore.	Satisfactory.
2203	F. W. Woods.	727 Perry St.	Dr. De Priest.	Satisfactory.
2204	W. J. Jones.	729 Perry St.	Dr. De Priest.	Satisfactory.
2205	F. W. Plank.	720 Buntin St.	F. W. Plank.	Satisfactory.
2206	J. A. Bayard, Jr.	727 Buntin St.	J. A. Bayard, Jr.	Satisfactory.
2207	Dr. A. B. De Priest.	724 Broadway	Dr. De Priest.	Satisfactory.
2208	E. W. Determan.	718 Broadway	E. W. Determan.	Satisfactory.
2209	Jas. S. Pritchett.	811 Broadway.	Jas. S. Pritchett.	Satisfactory.
2210	Mrs. Mary Hoffman.	823 Broadway.	Mrs. Mary Hoffman.	Bad.
2211	Henry Huffman.	824 Busseron.	Henry Huffman.	Satisfactory.
2212	H. Twietmeyer.	820 Busseron.	F. Twietmeyer.	Satisfactory.
2213	Chas. Bailey.	812 Busseron.	Mr. McCarty.	Satisfactory.
2214	E. R. McCarty.	802 Busseron.	Mr. McCarty.	Satisfactory.
2215	Knox County Jail.	8th and Broadway.	Knox County.	Satisfactory.
2216	B. Butman.	803 Busseron.	B. Butman.	Bad.
2217	S. Fowlen.	815 Busseron.	S. Fowlen.	Satisfactory.
2218	L. D. Knab.	802 Main St.	Anthony Bey.	Bad.
2219	Mrs. J. Thompson.	728 Main St.	Mrs. J. Thompson.	Satisfactory.
2220	Andrew Weiler.	806 Main St.	Andrew Weiler.	Bad.
2221	W. B. Robinson.	825 Busseron.	W. B. Robinson.	Satisfactory.
2222	F. W. Twietmeyer.	823 Broadway.	F. W. Twietmeyer.	Bad.
2223	Anna Miller.	824 Broadway.	Mrs. Hart.	Satisfactory.
2224	G. H. Harper.	818 Broadway.	G. H. Harper.	Satisfactory.
2225	F. M. Nail.	804 Broadway.	F. M. Nail.	Bad.
2226	H. A. Foulkes.	217 N. 8th St.	H. A. Foulkes.	Satisfactory.
2227	A. Bruner.	815 Buntin.	A. Bruner.	Satisfactory.
2228	John Hartje.	816 Buntin.	John Hartje.	Satisfactory.
2229	Chas. Avery.	810 Perry St.	Chas. Avery.	Bad.
2230	Claude Hughes.	806 Perry St.	L. A. Meyer.	Satisfactory.
2231	W. M. Alsop.	804 Perry St.	L. A. Meyer.	Satisfactory.
2232	L. A. Meyer.	803 Seminary.	L. A. Meyer.	Satisfactory.
2233	S. Meise.	809 Seminary.	S. Meise.	Bad.
2234	Allie Schellie.	503 N. 8th St.	Allie Schellie.	Satisfactory.
2235	Forest Harrington.	509 N. 8th St.	Allie Schellie.	Satisfactory.
2236	W. B. Shively.	801 Hart St.	John Kapps.	Satisfactory.
2237	R. Callender.	815 Hart St.	R. Callender.	Bad.
2238	R. S. Johnson.	603 N. 8th St.	Earl Buck.	Satisfactory.
2239	E. T. Clarke.	607 N. 8th St.	Earl Buck.	Satisfactory.
2240	Chas. Branning.	611 N. 8th St.	Chas. Branning.	Satisfactory.
2241	L. J. Baker.	617 N. 8th St.	L. J. Baker.	Bad.
2242	Sam Rumer.	621 N. 8th St.	Sam Rumer.	Satisfactory.
2243	J. F. Cox.	618 N. 9th St.	Geo. Pennington.	Satisfactory.
2244	Thos. Campbell.	621 N. 9th St.	Thos. Campbell.	Satisfactory.
2245	Geo. Pennington.	826 Hart St.	Geo. Pennington.	Bad.
2246	H. N. Carter.	823 Hart St.	Fred Volmer.	Satisfactory.
2247	L. J. Weisinger.	830 Seminary.	L. A. Meyer.	Bad.
2248	A. C. Thorne.	822 Seminary.	E. A. Ritterkamp.	Satisfactory.
2249	C. Cedarwash.	820 Seminary.	E. A. Ritterkamp.	Bad.
2250	Mrs. W. O. Coyle.	816 Seminary.	E. A. Ritterkamp.	Bad.
2251	R. C. Denison.	815 Seminary.	R. C. Denison.	Bad.
2252	C. L. Montgomery.	826 Perry St.	L. A. Meyer.	Satisfactory.
2253	Robert Capadell.	816 Perry St.	Robert Capadell.	Satisfactory.
2254	F. R. Davis.	819 Perry St.	F. R. Davis.	Satisfactory.
2255		215 N. 9th St.		Bad.
2256		903 Buntin St.		Satisfactory.
2257		905 Buntin St.		Satisfactory.
2258	C. G. Kimmell.	906 Broadway.	Care of Ben Beckman.	Satisfactory.
2259		912 Broadway.	L. F. Meise.	Satisfactory.
2260	Paul Simpson.	911 Broadway.	Paul Simpson.	Bad.
2261	W. E. Wood.	906 Busseron.	W. E. Wood.	Satisfactory.
2262	Mrs. J. Curtis.	910 Busseron.	Mrs. J. Curtis.	Satisfactory.
2263	Mrs. Emma Ayres.	907 Busseron.	Mrs. Emma Ayres.	Satisfactory.
2264	M. J. Reel.	903 Busseron.	M. J. Reel.	Satisfactory.
2265	Raywood Smallhouse.	101 1/2 Main.	Jos. Swarts.	Bad.
2266	Henry Shasere.	920 Main St.	Henry Shasere.	Bad.
2267	James Bradley.	929 Busseron.	Mrs. Kackley.	Bad.
2268	Mrs. H. Kackley.	921 Busseron.	Mrs. Kackley.	Satisfactory.
2269	A. B. Chambers.	917 Busseron.	A. P. De Bruler.	Satisfactory.
2270	D. T. Decker.	916 Busseron.	H. T. Decker.	Satisfactory.
2271	Chas. Anderson.	926 Busseron.	Mrs. Henry Huffman.	Satisfactory.
2272	Wm. Baker.	925 Broadway.	Wm. Baker.	Satisfactory.
2273	John Brocksmith.	918 Broadway.	John Brocksmith.	Bad.
2274	H. E. Finch.	925 Buntin St.	M. G. Weems.	Satisfactory.
2275	Geo. Brown.	923 Buntin.	Mrs. G. Weems.	Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2276	Chas. Harper	919 Buntin	Mrs. Marg	Bad.
2277	Tom Dattola	911 Buntin	Tom Dattola	Satisfactory.
2278		914 Buntin		Bad.
2279	A. Wm. Richter	915 Perry St.	A. Wm. Richter	Satisfactory.
2280	Jennie Catlett	908 Perry St.	Mrs. Hettie White	Bad.
2281	W. M. Simpson	904 Seminary	W. M. Simpson	Satisfactory.
2282	Mary Hautman	910 Seminary	Mary Hautman	Satisfactory.
2283	Mary Wooley	914 Seminary	Mary Wooley	Satisfactory.
2284	Mary Casady	413 N. 9th St.	Mary Casady	Bad.
2285	H. F. Hallowell	922 Perry St.	Louis Volmer	Satisfactory.
2286	Louis Volmer	930 Perry St.	Louis Volmer	Satisfactory.
2287	R. M. Kite	929 Perry St.	Fred Busse	Satisfactory.
2288	Frank Harrod	312 N. 10th St.	Mrs. M. C. O'Donnell	Satisfactory.
2289	Jos. Hans	308 N. 10th St.	Jos. Hans	Satisfactory.
2290	Geo. A. Miller	304 N. 10th St.	John Green	Bad.
2291	Parsonage	215 N. 10th St.		Satisfactory.
2292	T. L. Louis	1002 Broadway	Mrs. Mary Lonsakey	Satisfactory.
2293	J. C. Wise	1004 Broadway	Mrs. Mary Lonsakey	Satisfactory.
2294	Julius Kirsch	1012 Broadway	Amil Younghaus	Satisfactory.
2295	Anna Piel	119 N. 10th St.	Anna Piel	Satisfactory.
2296	J. B. Franklin	1004 Buseron	Mrs. Bromhouse	Satisfactory.
2297	Henry Dubois	1010 Buseron	Henry Dubois	Satisfactory.
2298	Mrs. Mary Gartner	1009 Buseron	Mrs. Gartner	Bad.
2299	Carrie Ossendorf	1007 Buseron	Carrie Ossendorf	Satisfactory.
2300	Anna Hirsch	1004 Main		Satisfactory.
2301	Annie Gross	1010 Main		Satisfactory.
2302	Geo. Kahl	1020 Main	Mr. Hillert	Bad.
2303	N. G. Foreman	1025 Buseron	N. G. Foreman	Bad.
2304	J. G. Jordan	1019 Buseron	J. G. Jordan	Bad.
2305	B. A. Dodd	1017 Buseron	Dr. H. Bekes	Bad.
2306	Minnie Kerner	1014 Buseron	Minnie Kerner	Bad.
2307	J. A. Williams	1018 Buseron	L. A. Meyers	Satisfactory.
2308	Joe Hulen	1026 Buseron	Chas. Crawley	Satisfactory.
2309	Mrs. W. M. Foulkes	1023 Broadway	Mrs. Foulkes	Bad.
2310	Jasper McCormick	1019 Broadway	Jasper McCormick	Satisfactory.
2311		1026 Broadway		Bad.
2312	Mrs. Nelson	1021 Buntin	Ed. Watson	Bad.
2313	Alice Cox	1027 Buntin	Alice Cox	Bad.
2314	John Kimmell	1022 Buntin	L. H. Volmer	Bad.
2315	S. M. Newcomb	1020 Buntin	L. H. Volmer	Satisfactory.
2316	Mr. Bender	1018 Buntin	L. H. Volmer	Bad.
2317	Frank Hukill	303 N. 10th St.	Frank Hukill	Satisfactory.
2318	Henry Meise	307 N. 10th St.	Henry Meise	Satisfactory.
2319	Brad. Riley	317 N. 10th St.	Brad. Riley	Satisfactory.
2320	Will Thompson	1014 Perry St.	Will Thompson	Bad.
2321	William Carroll	225 Hart St.	Adolph Krusa	Satisfactory.
2322	S. B. Gerald	508 N. 10th St.	Geo. Hall, Sr.	Satisfactory.
2323	George Hall	564 N. 10th St.	George Hall	Satisfactory.
2324	Ella Parsons	418 N. 10th St.	Building and Loan	Satisfactory.
2325	W. A. Brown	1018 Perry St.	Ernest Volmer	Satisfactory.
2326	J. C. Brodie	1024 Perry St.	Mrs. Julia	Bad.
2327	C. E. Christie	1001 Seminary	E. A. Ritterkamp	Satisfactory.
2328	L. B. Winger	1003 Seminary	E. A. Ritterkamp	Satisfactory.
2329	R. H. Simmers	1005 Seminary	E. A. Ritterkamp	Satisfactory.
2330	J. M. Doherty	1007 Seminary	E. A. Ritterkamp	Satisfactory.
2331	W. G. Arvin	1009 Seminary	E. A. Ritterkamp	Satisfactory.
2332	G. A. Haskin	1028 Seminary	G. A. Haskin	Bad.
2333	Frank Huffman	1020 Seminary	Frank Huffman	Bad.
2334	Chas. Hall	507 N. 10th St.	Chas. Hall	Bad.
2335	John Smith	575 N. 10th St.	Mrs. Mary Huffman	Satisfactory.
2336	H. J. Steppin	917 Hart St.	H. J. Steffin	Satisfactory.
2337	Mrs. Julia Steffin	913 Hart St.	Mrs. Julia Steffin	Satisfactory.
2338	Mrs. Mary Alinger	604 N. 10th St.	Mrs. Mary Alinger	Satisfactory.
2339	H. F. Jones	608 N. 10th St.	H. F. Jones	Satisfactory.
2340	Henry Branning	612 N. 10th St.	Henry Branning	Bad.
2341	Ernest Volmer	616 N. 10th St.	Ernest Volmer	Satisfactory.
2342	Fred Busse	623 N. 10th St.	Fred Busse	Satisfactory.
2343	John Shumaker	623 N. 10th St.	John Shumaker	Satisfactory.
2344	M. M. Davis	621 N. 10th St.	Care Geo. Lott	Satisfactory.
2345	J. F. Vincel	611 N. 10th St.	Geo. Hall	Satisfactory.
2346	John Kirsch	603 N. 10th St.	George Hall	Satisfactory.
2347	Rhodie Lee	1022 Hart St.	Rhodie Lee	Satisfactory.
2348	Chas. Mallory	1030 Hart St.	Mrs. Hettie White	Satisfactory.
2349	Fred Brown	608 N. 11th St.	Fred Brown	Satisfactory.
2350	August Yokum	612 N. 11th St.	August Yokum	Bad.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2351	John Myers.	618 N. 11th St.	Ed. Yokum.	Satisfactory.
2352	Chris. Bonham.	624 N. 11th St.	Fred Marone.	Bad.
2353	Mary Karachefsky.	1103 Shelby St.	Karachefsky heirs.	Satisfactory.
2354	Chas. Horseman.	609 N. 11th St.	Chas. Horseman.	Satisfactory.
2355	Herman Brown.	1104 Hart St.	Herman Brown.	Satisfactory.
2356	Herman Brown.	1021 Hart St.	Herman Brown.	Bad.
2357	J. E. Norman.	1114 Hart St.	John Hall.	Satisfactory.
2358	Joe Snyder.	604 Upper 11th.	John Hall.	Bad.
2359	Jess H. Brown.	608 Upper 11th.	Jess H. Brown.	Satisfactory.
2360	Vincennes Storage Co.	Shelby and Upper 11th.	Vincennes Storage Co.	Satisfactory.
2361	G. H. Loerts.	24 S. 7th St.	Geo Kline Estate.	Satisfactory.
2362	Ed. Beiradorfer.	32 S. 7th St.	Adams.	Satisfactory.
2363	Louise Beckman.	709 Vigo St.	Louise Beckman.	Satisfactory.
2364	Ed. Gardner.	703 Vigo St.	Ed. Gardner.	Satisfactory.
2365	Leo Wendling.	114 S. 7th St.	Anton Heits.	Satisfactory.
2366	Wm. Riley.	120 S. 7th St.	Wm. Wendling.	Satisfactory.
2367	Anton Froiky.	711 Church St.	Mr. Klenschhouse.	Satisfactory.
2368	Mae Broulette.	228 S. 7th St.	Mae Broulette.	Bad.
2369	Jess Williams.	716 Barnett.	Jess Williams.	Satisfactory.
2370	Wm. Recker.	703 Nicholas.	Wm. Recker.	Satisfactory.
2371	B. Barry.	510 S. 7th St.	B. Barry.	Satisfactory.
2372	Joe Joary.	512 S. 7th St.	Mrs. Muchestom.	Satisfactory.
2373	J. B. Ark.	514 S. 7th St.	Mrs. Muchestom.	Satisfactory.
2374	M. Robeson.	Cor. 7th and Bayou.	Louis Beckman.	Satisfactory.
2375	T. Burway.	610 S. 7th St.	T. Burway.	Satisfactory.
2376	Edmond Burway.	716 S. 7th St.	Mrs. Burway.	Satisfactory.
2377	Louis Mallots.	618 S. 7th St.	Lou Monimee.	Satisfactory.
2378		620 S. 7th St.		Bad.
2379	E. M. Deluryea.	703 Prairie.	E. M. Deluryea.	Satisfactory.
2380	F. Pacot.	711 Prairie St.	E. M. Deluryea.	Satisfactory.
2381	Fannie Richter.	715 Prairie St.	Fannie Richter.	Bad.
2382	Gett Richter.	723 Prairie St.	Matt Emry.	Satisfactory.
2383	Chas. Bishop.	727 Prairie St.	Ben Wheeler.	Satisfactory.
2384	Geo. Bouligny.	731 Prairie St.	Geo. Bouligny.	Satisfactory.
2385	O. Summerville.	711 S. 8th St.	Mrs. Alexander.	Satisfactory.
2386	Arthur Bonham.	719 S. 8th St.	Arthur Bonham.	Satisfactory.
2387	Anna Whitstine.	727 S. 8th St.	Anna Whitstine.	Satisfactory.
2388	Elizabeth Martin.	720 Prairie St.	Elizabeth Martin.	Satisfactory.
2389	Fred Southerland.	629 S. 8th St.	Mr. Shaller.	Satisfactory.
2390	Harry McCarty.	615 S. 8th St.	Joe Halter.	Satisfactory.
2391	Jas. Hughes.	613 S. 8th St.	John Miller.	Satisfactory.
2392	Lena Rausch.	611 S. 8th St.	Lena Rausch.	Satisfactory.
2393	Joe. Bouchie.	607 S. 8th St.	Joe. Bouchie.	Satisfactory.
2394	Louis Dehon.	713 Bayou St.	Louis Beckman.	Satisfactory.
2395	Josephine Richard.	714 Bayou St.	Josephine Richard.	Satisfactory.
2396	John Crawford.	722 Bayou St.	John Crawford.	Satisfactory.
2397	John Mattinger.	724 Bayou St.	Hall, Second Natl. Bank.	Satisfactory.
2398	Fannie Delisle.	531 S. 8th St.	Fannie Delisle.	Satisfactory.
2399	Geo. Johnston.	519 S. 7th St.	Geo. Johnston.	Satisfactory.
2400	Tony Halter.	515 S. 8th St.	Tony Halter.	Satisfactory.
2401	Anthony Risch.	717 Main St.	Anthony Risch.	Satisfactory.
2402	Q. F. Hardetke.	722 Vigo St.	Mrs. Muckenstom.	Satisfactory.
2403	Olive Williamson.	718 Vigo St.	Olive Williamson.	Satisfactory.
2404	Will King.	715 Vigo St.	Squire Becker.	Bad.
2405	A. D. Faught.	721 Vigo St.	Squire Becker.	Satisfactory.
2406	F. M. Hockgeiger.	729 Vigo St.	John Hauger.	Satisfactory.
2407	L. E. Cummins.	111 S. 8th St.	L. E. Cummins.	Satisfactory.
2408	N. Glass.	718 Church St.	N. Glass.	Satisfactory.
2409	W. R. Gillette.	215 S. 8th St.	Miss Mathemie.	Satisfactory.
2410	John Hunckler.	217 S. 8th St.	Mrs. Jos. Serbers.	Bad.
2411	Ralph Gowan.	221 S. 8th St.	J. F. Miller.	Bad.
2412	John Bonvy.	720 Barnett.	John Bonvy.	Bad.
2413	Joseph Summers.	719 Barnett.	Mrs. Grigsby.	Satisfactory.
2414	Chas. Louges.	729 Barnett.	Chas. Louges.	Satisfactory.
2415	Mrs. A. Tehins.	311 S. 8th St.	Mrs. A. Tehins.	Bad.
2416	Catherine Scott.	811 Dubois St.	Catherine Scott.	Satisfactory.
2417	Mrs. Mary Spaulding.	807 Dubois St.	Mrs. Spaulding.	Satisfactory.
2418	Wm. Vatchett.	410 S. 8th St.	Vander Martin Grimes.	Satisfactory.
2419	Theresa Muckenstom.	418 S. 8th St.	T. Muckenstom.	Satisfactory.
2420	James Reel.	812 Nicholas.	H. A. Brassart.	Satisfactory.
2421	Chas. Bouchie.	807 Nicholas.	Julia Vatchett.	Satisfactory.
2422	H. Kuhn.	502 S. 8th St.	Catherine Kuhn.	Satisfactory.
2423	Van Tsch Macher.	502 S. 8th St.	Julia Vatchett.	Bad.
2424	Catherine Muckenstom.	508 S. 8th St.	C. Muckenstom.	Satisfactory.
2425	Catherine Kuhn.	514 S. 8th St.	Catherine Kuhn.	Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2426	Ether Falleur	520 S. 8th St.	Mrs. Werks	Satisfactory.
2427	A. J. Summit	522 S. 8th St.	Mrs. Hauger	Satisfactory.
2428	Sylvia Weset	526 S. 8th St.	J. Tony Halter	Satisfactory.
2429	O. H. Delisle	807 Bayou St.	O. H. Delisle	Satisfactory.
2430	John Froelke	803 Bayou St.	John Froelke	Satisfactory.
2431	Wm. Wendling	618 S. 8th St.	Wm. Wendling	Bad.
2432	Anton Heits	630 S. 8th St.	Anton Heits	Satisfactory.
2433	Mike Higgins	807 Prairie St.	Mrs. Soudriette	Satisfactory.
2434	Pat Longo	712 S. 8th St.	Pat Longo	Satisfactory.
2435	Joe. Darby	720 S. 8th St.	Joe. Darby	Satisfactory.
2436	Jess Quillar	736 S. 8th St.	Jess Quillar	Satisfactory.
2437	Peter Boyer	812 Willow St.	Peter Boyer	Satisfactory.
2438	J. E. Powers	822 Willow St.	Building and Loan	Satisfactory.
2439	Pete Hobbs	741 S. 9th St.	Vandermartin and Grayson	Satisfactory.
2440	Rose Jognet	731 S. 9th St.	Rose Jognet	Satisfactory.
2441	John Beam	34 S. 8th St.	John Beam	Bad.
2442	Joe. V. Hershey	118 S. 8th St.	Joe. V. Hershey	Bad.
2443	Sophia Nestlebut	104 S. 8th St.	S. Nestlebut	Bad.
2444	J. Hershey	124 S. 8th St.	J. Hershey	Bad.
2445	Louis F. Miller	204 S. 8th St.	John F. Miller	Bad.
2446	Mrs. Mary Papps	214 S. 8th St.	Mrs. Mary Papps	Bad.
2447	Chas. Coleman	218 S. 8th St.	Chas. Coleman	Bad.
2448	H. J. Werker	304 S. 8th St.	H. J. Werker	Bad.
2449	Camile Castiux	312 S. 8th St.	John F. Miller	Bad.
2450	J. M. Butler	817 Dubois St.	Mrs. Anna Bergman	Bad.
2451	Elsie Burnsworth	821 Dubois St.	A. E. Becker	Bad.
2452	L. L. Couch	827 Dubois St.	A. E. Becker	Bad.
2453	C. S. Bonham	420 S. 9th St.	Gluck heirs	Bad.
2454	Mrs. H. Faender	827 Nicholas St.	Mrs. H. Faender	Bad.
2455	Dart Wallan	824 Bayou St.	Mrs. M. Werker	Bad.
2456	Mary Werker	818 Bayou St.	Mrs. M. Werker	Bad.
2457	A. Bohnert	817 Bayou St.	Tony Bohnert	Bad.
2458	Mitchell Joyce	615 S. 9th St.	Mitchell Joyce	Bad.
2459	August Smith	617 S. 9th St.	August Smith	Bad.
2460	Frank Arnold	627 S. 9th St.	August Smith	Bad.
2461	J. T. Chambers	631 S. 9th St.	Mason Niblack	Satisfactory.
2462	Gene Debreque	813 Prairie St.	Mr. Buckles	Bad.
2463	John Rupprecht	703 S. 9th St.	John Rupprecht	Bad.
2464	Joe Ueding	709 S. 9th St.	Joe Ueding	Satisfactory.
2465	Mike Kroeger	811 Prairie St.	Mike Kroeger	Bad.
2466	Leon Charles	725 S. 9th St.	Anton Kapps	Bad.
2467	Julie Fowler	727 S. 9th St.	Anton Kapps	Satisfactory.
2468	Felix Gremore	740 S. 9th St.	Felix Gremore	Satisfactory.
2469	Mike Ryan	736 S. 9th St.	Anton Kapps	Satisfactory.
2470	Anton Kapps	730 S. 9th St.	Anton Kapps	Bad.
2471	C. W. French	722 S. 9th St.	Anton Kapps	Satisfactory.
2472	Jess Hanover	901 Prairie St.	Mrs. E. Moer	Bad.
2473	Mrs. E. Moer	907 Prairie St.	Mrs. E. Moer	Satisfactory.
2474	A. L. Phippert	909 Prairie St.	Joe Peach	Satisfactory.
2475	E. Rightmayer	632 S. 9th St.	Mrs. C. Shaffer	Satisfactory.
2476	Gaston Lafavre	620 S. 9th St.	Ferd. Thomas	Satisfactory.
2477	Fred Kurts	618 S. 9th St.	A. Tretty	Satisfactory.
2478	A. G. Girvin	610 S. 9th St.	Ed. La Plarte	Satisfactory.
2479	G. Bergman	528 S. 9th St.	G. Bergman	Satisfactory.
2480	Louis Hamm	570 S. 9th St.	John Ruple	Bad.
2481	Kate Recker	827 Vigo Street	Kate Recker	Satisfactory.
2482	Wm. Kelley	111 S. 9th St.	Wm. Kelley	Satisfactory.
2483	C. Heidenreich	123 S. 9th St.	C. Heidenreich	Satisfactory.
2484	David Soden	822 Church St.	Mr. J. Hershey	Satisfactory.
2485	John Heller	203 S. 9th St.	John Heller	Bad.
2486	Mrs. P. Leggett	223 S. 9th St.	Mrs. J. Froky	Satisfactory.
2487	A. Desay	810 Barnett St.	Mrs. Callon	Satisfactory.
2488	Mary Sumnick	829 Barnett St.	Mary Sumnick	Satisfactory.
2489	John A. Keller	311 S. 9th St.	John A. Keller	Bad.
2490	J. W. Walker	818 Dubois St.	John Froelke	Satisfactory.
2491	Isador Devenot	402 S. 9th St.	F. Stalkamp	Satisfactory.
2492	J. Walters	412 S. 9th St.	F. Schmidt	Bad.
2493	John Foster	422 S. 9th St.	Harry Lewis	Satisfactory.
2494	Frank J. Recker	911 Nicholas St.	Frank J. Recker	Bad.
2495	Margaret Pohlman	504 S. 9th St.	Margaret Pohlman	Satisfactory.
2496	Frank Simrick	921 Nicholas St.	August Shoffer	Satisfactory.
2497	August Shoffer	531 S. 10th St.	August Shoffer	Bad.
2498	Ed. J. Heines	609 S. 10th St.	Mrs. Mary Frey	Satisfactory.
2499	Anton Frey	613 S. 10th St.	Anton Frey	Satisfactory.
2500	John Thais	617 S. 10th St.	John Thais	Satisfactory.

TABLE No. 4—Continued.

Sample Num-ber.	Resident.	Address.	Owner of Property.	Remarks.
2501	Pierre Van Moer	619 S. 10th St.	Ferd. Thomas	Satisfactory.
2502	Gustav Falleur	915 Prairie St.	Joe Kapps	Bad.
2503	Louis Hreer	921 Prairie St.	Joe Kapps	Satisfactory.
2504	W. H. Farris	925 Prairie St.	Mr. Klein	Bad.
2505	Mr. Parry	707 S. 10th St.	Care Mr. Borden	Satisfactory.
2506	Sam Bailey	709 S. 10th St.	Jacob Biel	Satisfactory.
2507	Maggie Porter	735 S. 10th St.	Mrs. Rubrecht	Satisfactory.
2508	George Lamarsh	747 S. 10th St.	John Gartzow	Satisfactory.
2509	Jos. Schlomer	749 S. 10th St.	Herman Schlomer	Satisfactory.
2510	Herman Schlomer	753 S. 10th St.	Herman Schlomer	Satisfactory.
2511	Casper Hehmann	429 S. 10th St.	Casper Hohmann	Satisfactory.
2512	Chas. Thurgood	417 S. 10th St.	Chas. Thurgood	Satisfactory.
2513	G. M. Dattilo	405 S. 10th St.	G. M. Dattilo	Satisfactory.
2514	Sam Pasea	922 Dubois St.	Mr. Brokhage	Satisfactory.
2515	Joseph White	917 Dubois St.	Lissie Schlomer	Bad.
2516	Chas. Dattilo	918 Dubois St.	Chas. Dattilo	Satisfactory.
2517	F. B. Gilchrist	312 S. 9th St.	Carrie Recker	Satisfactory.
2518	Louisa Thompson	929 Barnett St.	Louisa Barnett	Satisfactory.
2519	Catherine Cullap	822 Barnett St.	Catherine Cullap	Bad.
2520	Mrs. Agnes Bayard	208 S. 9th St.	Mrs. A. Bayard	Bad.
2521	Henry Shassere	16 S. 9th St.	John Lang	Satisfactory.
2522	G. I. Long	904 Vigo St.	Joe. Keifer, Sr.	Satisfactory.
2523	Herman Shassere	910 Vigo St.	Kate Bagenent	Bad.
2524	Frank Butmar	907 Vigo St.	Frank Butmar	Satisfactory.
2525	Roy Snyder	910 Church St.	Henry Belgeworth	Satisfactory.
2526	Caroline Bachert	914 Church St.	Caroline Bachert	Satisfactory.
2527	B. Ostendorf	925 Vigo St.	Mrs. Ostendorf	Satisfactory.
2528	Ed. Ostendorf	921 Vigo St.	Mrs. C. Ostendorf	Satisfactory.
2529	J. J. Black	917 Vigo St.	Mrs. C. Dora	Satisfactory.
2530	John Frank	914 Vigo St.	John Frank	Satisfactory.
2531	Will Bey	928 Vigo St.	Will Bey	Bad.
2532	G. W. Taylor	915 Main St.	L. & J. Hellert	Satisfactory.
2533	Chas. Miller	913 Main St.	L. & J. Hellert	Bad.
2534	Harry Rumer	914 Main St.	Harry Rumer	Bad.
2535	Dennis Williams	22 S. 10th St.	H. Roseman	Bad.
2536	S. H. Bracken	1014 Vigo St.	Mike Kluck	Bad.
2537	Marion Porter	1033 Vigo St.	Mayn House	Bad.
2538	Henry Krack	122 S. 10th St.	L. A. Meyers	Bad.
2539	Hiram Smith	120 S. 10th St.	L. A. Meyers	Bad.
2540	Mrs. Bedelle	128 S. 10th St.	L. A. Meyers	Bad.
2541	Henry Speckman	128 S. 10th St.	L. A. Meyers	Bad.
2542	M. Hobbs	1027 Church St.	L. A. Meyers	Satisfactory.
2543	Mary Nietens	1023 Church St.	Mary Nietens	Satisfactory.
2544	C. H. Boltman	1017 Church St.	C. H. Boltman	Bad.
2545	Henry Recker	208 S. 10th St.	Henry Recker	Satisfactory.
2546	Lena Duesterberg	212 S. 10th St.	Lena Duesterberg	Satisfactory.
2547	John Balgenorth	216 S. 10th St.	John Balgenorth	Satisfactory.
2548	Wilhelmina Kroeger	1002 Barnett St.	Wilhelmina Kroeger	Bad.
2549	Wm. Brown	1010 Barnett St.	Wm. Brown	Satisfactory.
2550	Katherine Kartsburg	1014 Barnett St.	K. Hartsburg	Satisfactory.
2551	W. J. Schlomer	1022 Barnett St.	Wm. Schlomer	Satisfactory.
2552	Frank Weiser	300 S. 10th St.	Frank Weiser	Satisfactory.
2553	Mrs. Baker	Dubois and 10th Sts	Chas. Mahleke	Satisfactory.
2554	Jas. McHale	1031 Dubois St.	Mary Unser	Satisfactory.
2555	Chas. J. Shaffers	404 S. 10th St.	Chas. J. Shaffers	Satisfactory.
2556	Chas. J. Shaffers	406 S. 10th St.	Chas. J. Shaffers	Bad.
2557	J. A. Malash	416 S. 10th St.	Mr. Montgomery	Satisfactory.
2558	Lee Platt	426 S. 10th St.	Mr. Borden	Satisfactory.
2559	Logan Boyer	1010 Nicholas St.	Henry Rushville	Satisfactory.
2560	Harvey Doann	1018 Nicholas St.	Mr. Shockman	Satisfactory.
2561	Mary Baltman	1028 Nicholas St.	Mary Baltman	Satisfactory.
2562	John Gerchke	1017 Nicholas St.	John Gerchke	Satisfactory.
2563	Mrs. A. Alberding	405 S. 10th St.	Mrs. A. Alberding	Satisfactory.
2564	Alvin Hood	522 S. 10th St.	Katherine Stalkamp	Satisfactory.
2565	John M. Grayson	904 S. 10th St.	John M. Grayson	Satisfactory.
2566	C. N. West	616 S. 10th St.	C. N. West	Satisfactory.
2567	Thomas Fish	628 S. 10th St.	Leo Simon	Satisfactory.
2568	Leo Simon	632 S. 10th St.	Leo Simon	Satisfactory.
2569	Mag. Clausmann	637 S. 11th St.	Mag. Clausmann	Satisfactory.
2570	Will Werner	638 S. 11th St.	City of Vincennes	Satisfactory.
2571	James Smith	1029 Bayou St.	James Smith	Satisfactory.
2572	Henry Lineback	1021 Bayou St.	Mr. Branch	Satisfactory.
2573	Mike Besselman	904 S. 11th St.	Mike Besselman	Satisfactory.
2574	Carl Cartright	1018 Bayou St.	Mrs. Joe Joyce	Satisfactory.
2575	Jas. Keith	525 S. 11th St.	Mr. Alberding	Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2576	Lizzie Frolky	519 S. 11th St.	Lizzie Frolky	Satisfactory.
2577	Joseph Ash	513 S. 11th St.	Mrs. L. Alberding	Satisfactory.
2578	Martin Frolky	520 S. 11th St.	Martin Frolky	Satisfactory.
2579	Peter Dahns	506 S. 11th St.	Peter Dahns	Satisfactory.
2580	L. Jansen.	502 S. 11th St.	L. Jansen.	Satisfactory.
2581	Louise Black	503 S. 11th St.	L. Jansen.	Satisfactory.
2582	Arthur Bailey	1210 Nicholas St.	Miss A. Busch	Satisfactory.
2583	John Jansen	405 S. 12 $\frac{1}{2}$ St.	John Jansen	Bad.
2584	John Ray	331 S. 12 $\frac{1}{2}$ St.	Mrs. M. Hotaki	Bad.
2585	Chas. Lane	325 S. 12 $\frac{1}{2}$ St.	L. A. Meyers	Satisfactory.
2586	R. G. Holcomb	1210 Dubois St.	Building and Loan.	Satisfactory.
2587	Wm. Fields	336 S. 12th St.	Mr. Borden	Satisfactory.
2588	L. L. Smith	332 S. 12th St.	Helen Smith	Satisfactory.
2589	Anna Smith	326 S. 12th St.	Mrs. Nowaskie	Satisfactory.
2590	Lizzie Moran	1203 Barnett St.	Mrs. Nowaskie	Bad.
2591	Jas. Finn	1204 Barnett St.	Jas. Finn	Satisfactory.
2592	Willard Killion	1214 Barnett St.	Building and Loan.	Satisfactory.
2593	Oscar Carie	1218 Barnett St.	Harry Sohms	Bad.
2594	O. E. Dayhass	1230 Barnett St.	Henry Lebart	Satisfactory.
2595	Lizzie Gluck	303 S. 12 $\frac{1}{2}$ St.	Joe Ruprecht	Bad.
2596	John Lebart	309 S. 12 $\frac{1}{2}$ St.	John Lebart	Satisfactory.
2597	Wm. Leathers	313 S. 12 $\frac{1}{2}$ St.	Wm. Leathers	Satisfactory.
2598	J. H. Lowe	131 S. 13th St.	Dr. Held	Satisfactory.
2599	Geo. H. Milligan	123 S. 13th St.	Geo. H. Milligan	Bad.
2600	Elizabeth Williams	119 S. 13th St.	Elizabeth Williams	Satisfactory.
2601	Joseph Eads	118 S. 12th St.	John Burnett	Satisfactory.
2602	John Burnett	117 S. 12th St.	John Burnett	Satisfactory.
2603	Frank Cabarien	1213 Vigo St.	Mrs. Salinger	Satisfactory.
2604	Ed. Harrison	1221 Vigo St.	George Milligan	Satisfactory.
2605	Earl Combs	1225 Vigo St.	Earl Combs	Satisfactory.
2606	Wm. Wolfe	1227 Vigo St.	Wm. Wolfe	Satisfactory.
2607	Daniel Wolfe	1229 Vigo St.	Daniel Wolfe	Satisfactory.
2608	L. Combs	1235 Vigo St.	L. Combs	Satisfactory.
2609	Henry Meyers	304 S. 12 $\frac{1}{2}$ St.	Mr. Glass	Bad.
2610	Wm. Bartlow	308 S. 12 $\frac{1}{2}$ St.	Wm. Bartlow	Satisfactory.
2611	S. E. Cole	312 S. 12 $\frac{1}{2}$ St.	S. E. Cole	Bad.
2612	Joe Souligney	1215 Nicholas St.	Joe Souligney	Bad.
2613	Henry Muckenstorn	520 S. 12 $\frac{1}{2}$ St.	Henry Muckenstorn	Satisfactory.
2614	M. O. Rose	517 S. 13th St.	Mr. Borden	Satisfactory.
2615	Tony Leabert	1218 Nicholas St.	Tont Leabert	Satisfactory.
2616	Albert Leach	1224 Nicholas St.	Tony Leabert	Bad.
2617	J. W. Smithmeyer	341 S. 13th St.	Hamit Hinkle	Bad.
2618	Jess McDonald	337 S. 13th St.	Hamit Hinkle	Bad.
2619	Wm. Richards	333 S. 13th St.	Hamit Hinkle	Bad.
2620	C. Trowbridge	327 S. 13th St.	Mr. Borden	Satisfactory.
2621	John Taylor	305 S. 13th St.	Mr. Borden	Satisfactory.
2622	Francis Lay	321 S. 13th St.	Mr. Borden	Satisfactory.
2623	John Freshley	311 S. 13th St.	L. A. Meyers	Satisfactory.
2624	Walter Mahoney	303 S. 13th St.	Walter Mahoney	Bad.
2625	Anna Lutinske	301 S. 13th St.	Anna Lutinski	Bad.
2626	Jas. Thorn	1222 Vigo St.	Jas. Thorn	Bad.
2627	Mrs. M. A. Lantz	1215 Vigo St.	Mrs. D. Stewart	Satisfactory.
2628	Jane Lane	1210 Vigo St.	Jane Lane	Satisfactory.
2629	Louis Phohl	1203 Main St.	Louis Phohl	Satisfactory.
2630	Frank Payton	1207 Main St.	John Payton	Bad.
2631	Robert Caughran	1211 Main St.	Mrs. Frank Weber	Bad.
2632	Mrs. Lucy Snyder	1213 Main St.	Mrs. Lucy Snyder	Bad.
2633	M. E. Myers	1225 Main St.	M. E. Meyers	Satisfactory.
2634	Fred Thompson	1120 Main St.	Ed. Oaxman	Satisfactory.
2635	B. Cloud	1112 Main St.	B. Cloud	Bad.
2636	O. McGuire	1108 Main St.	Ida Kellems	Satisfactory.
2637	Herb O. Shane	Main and 11th Sts.		Bad.
2638	John Miller	1105 Buseron St.	John Miller	Satisfactory.
2639	Wm. V. Sullivan	1111 Buseron St.	J. S. Miller	Satisfactory.
2640	Lae. Furgeson	1127 Buseron St.	Fred Volmer	Satisfactory.
2641	Wm. Linback	1129 Buseron St.	Wm. Linback	Satisfactory.
2612	Jas. Barnett	1130 Buseron St.	Grayson & Vandermartin	Satisfactory.
2643	Tom Vint	1126 Buseron St.		Satisfactory.
2644	Sam Smith	1122 Buseron St.	George Dutton	Satisfactory.
2645	Ed. Byren	1118 Buseron St.	John Conene	Bad.
2646	Chas. Ash	1112 Buseron St.	Fred Holtman	Satisfactory.
2647	Ed. Butler	1110 Buseron St.	Fred Holtman	Satisfactory.
2648	Leo Master	1106 Buseron St.	Chas. Crawley	Bad.
2649	Mrs. Mary Ewers	1103 Broadway St.	Mrs. Mary Ewers	Satisfactory.
2650	Alice Carlein	1107 Broadway St.	Alice Carlein	Satisfactory.



TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2651	Geo. Mollock.	1115 Broadway St.	Geo. Mollock.	Bad.
2652	Jos. Roseman.	1121 Broadway St.	Jos. Roseman.	Bad.
2653	John Ohnemus.	1127 Broadway St.	John Ohnemus.	Satisfactory.
2654	F. C. Brackman.	1131 Broadway St.	F. C. Brackman.	Bad.
2655	F. B. Gelaspie.	1142 Broadway St.	D. N. Lane.	Bad.
2656	Miss Sallie Keith.	1136 Broadway St.	Sallie Keith.	Satisfactory.
2657	Wm. Walters.	1119 Buntin St.	Wm. Walters.	Satisfactory.
2658	Ben Benders.	1121 Buntin St.	Fannie Willoughby.	Satisfactory.
2659	B. Bender.	1133 Buntin St.	B. Bender.	Bad.
2660	Fred Osterhage.	1137 Buntin St.	Judge Cobb.	Bad.
2661	Chas. Underfurth.	1141 Buntin St.	Chas. Underfurth.	Satisfactory.
2662	Roy Cannon.	1142 Buntin St.	Mrs. Orr.	Bad.
2663	Mrs. E. Hamm.	1138 Buntin St.	George Traylor.	Satisfactory.
2664	Mike McKeever.	1130 Buntin St.	Mike McKeever.	Satisfactory.
2665	Kate Murphy.	1126 Buntin St.	Kate Murphy.	Satisfactory.
2666	Walter Sparrow.	1120 Buntin St.	George Sparrow.	Satisfactory.
2667	John Bauer.	1108 Buntin St.	Chas. Dreyman.	Satisfactory.
2668	Ernest Mix.	303 N. 11th St.	Ernest Mix.	Satisfactory.
2669	Bridget Kilmartin.	1102 Perry St.	Bridget Kilmartin.	Bad.
2670	W. W. Lloyd.	1119 Perry St.	Chas. Dreiman.	Satisfactory.
2671	Dr. Richards.	1125 Perry St.	Dr. Richards.	Satisfactory.
2672	Mrs. C. Bauer.	1127 Perry St.	Mrs. C. Bauer.	Bad.
2673	Chas. Kirkham.	1133 Perry St.	E. A. Ritterkamp.	Satisfactory.
2674	Howard Dreiman.	1141 Perry St.	Howard Dreiman.	Satisfactory.
2675	Mrs. Bridget Keith.	1142 Perry St.	Wm. Ansoop.	Satisfactory.
2676	John Miller.	1128 Perry St.	John Miller.	Bad.
2677	Margaret Jaquenal.	1122 Perry St.	Margaret Jaquenal.	Satisfactory.
2678	Mrs. Sarah Hewitt.	1114 Perry St.	Ed. Dreiman.	Bad.
2679	Stewart Milligan.	1118 Perry St.	Stewart Milligan.	Satisfactory.
2680	Geo. W. Thomas.	1111 Seminary.	Geo. W. Thomas.	Satisfactory.
2681	Mrs. Carrie Ashe.	1115 Seminary.	Mrs. Carrie Ashe.	Satisfactory.
2682	C. A. Schults.	1119 Seminary.	C. A. Schults.	Bad.
2683	Elite Club House.	1127 Seminary.	La Platte.	Bad.
2684	School No. 4, Colored.	Seminary and 12th.	City.	Bad.
2685	August Vonbehren.	1144 Seminary.	August Vonbehren.	Satisfactory.
2686	Henry Vonbehren.	1140 Seminary.	Henry Vonbehren.	Satisfactory.
2687	G. W. Barnhart.	1134 Seminary.	Ernest Vollmer.	Bad.
2688	Casper Reiter.	1124 Seminary.	Casper Reiter.	Bad.
2689	Freddie Mitchell.	1114 Seminary.	W. M. Aloop.	Bad.
2690	Frank Johnson.	1103 Hart St.	Frank Johnson.	Bad.
2691	Louise Noe.	1107 Hart St.	Greyson & Vandermartin.	Satisfactory.
2692	Miss H. Miller.	1113 Hart St.	Miss H. Miller.	Bad.
2693	Chas. Weitz.	1133 Hart St.	Ernest Vollmer.	Satisfactory.
2694	J. L. McWilliams.	602 N. 12th St.	J. L. McWilliams.	Satisfactory.
2695	W. D. Brown.	608 N. 12th St.	W. D. Brown.	Satisfactory.
2696	M. Harshman.	613 Upper 11th St.	M. Harshman.	Bad.
2697	Phillip Cullison.	617 Upper 11th St.	Phillip Cullison.	Satisfactory.
2698	J. H. Meyers.	620 N. 12th St.	Anton Burse.	Satisfactory.
2699	E. F. Glass.	616 N. 12th St.	E. F. Glass.	Bad.
2700	John C. Kimberley.	614 N. 12th St.	John C. Kimberley.	Satisfactory.
2701	M. J. Dreiman.	605 N. 12th St.	M. J. Dreiman.	Satisfactory.
2702	L. T. Barekman.	613 N. 12th St.	Dr. Geo. Aloop.	Bad.
2703	W. M. McCoy.	617 N. 12th St.	Wm. Summitt.	Bad.
2704	Wm. Blunk.	621 N. 12th St.	Mrs. W. D. Brown.	Satisfactory.
2705	Ida Barekman.	625 N. 12th St.	Mrs. W. D. Brown.	Satisfactory.
2706	A. Fluviat.	622 N. 13th St.	A. Fluviat.	Bad.
2707	Mrs. W. Pettiford.	612 N. 13th St.	Mrs. Davis.	Satisfactory.
2708	Mrs. B. Harris.	608 N. 13th St.	Mr. Davis.	Satisfactory.
2709	Frank Halberg.	604 N. 13th St.	Frank Halberg.	Satisfactory.
2710		Corner Hart and 12th.		Satisfactory.
2711	John Royse.	1216 Main St.	John Royse.	Bad.
2712	M. V. Presnell.	1224 Main St.	M. V. Presnell.	Satisfactory.
2713	J. H. Powell.	1232 Main St.	Chas. Borden.	Bad.
2714	A. Brandenburg.	1225 Buseron St.	A. Brandenburg.	Satisfactory.
2715	Jasper Moore.	1231 Buseron St.	Jasper Moore.	Satisfactory.
2716	L. J. Fohn.	1209 Buseron St.	Ed. Fries.	Bad.
2717	Ed. Fries.	1212 Buseron St.	Ed. Fries.	Bad.
2718	Jas. Fries.	1218 Buseron St.	Jas. Fries.	Satisfactory.
2719	Mike Schwab.	1232 Buseron St.	Mike Schwab.	Satisfactory.
2720	Jas. Holliday.	1215 Broadway.	Jas. Holliday.	Bad.
2721	Jas. Henbey.	1207 Broadway.	M. Delisle.	Bad.
2722	J. E. Delisle.	1203 Broadway.	J. E. Delisle.	Bad.
2723	Parris Sexton.	1210 Broadway.		Satisfactory.
2724	A. T. Murphy.	1232 Broadway.	Frank Foulks.	Satisfactory.
2725	H. J. Boyer.	1238 Broadway.	J. S. Adams.	Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2726	W. A. Cardinal	1237 Buntin	W. A. Cardinal	Bad.
2727	Lily Suggett	1233 Buntin	John Freshhouse	Satisfactory.
2728	Bertie Deem	1229 Buntin	Bertie Deem	Bad.
2729	C. F. Schultz	1223 Buntin	C. F. Schultz	Bad.
2730	John Presnell	1219 Buntin	John Presnell	Bad.
2731	Vernon McCormick	1215 Buntin	John Presnell	Bad.
2732	Alvin Younghaus	1211 Buntin	Alvin Younghaus	Bad.
2733	John Effkeman	1203 Buntin	John Effkeman	Bad.
2734	Mrs. Mae Jones	1202 Buntin	Mrs. Huffman	Bad.
2735	Lon Marshero	1214 Buntin	John Freshhouse	Satisfactory.
2736	Frank Wilson	1218 Buntin	Frank Wilson	Bad.
2737	Lee Conn	1222 Buntin	Fred Holtzman	Bad.
2738	C. C. Jones	1230 Buntin	C. C. Jones	Bad.
2739	E. G. Powell	1239 Perry	Mrs. Hettie White	Bad.
2740	Henry Gordon	1233 Perry	Henry Gordon	Bad.
2741	J. C. Bollman	315 N. 12th St.	Dr. Trout	Bad.
2742	Frank Catt	1203 Perry	Chas. Poulett	Satisfactory.
2743	John W. Andrews	1215 Perry	Chas. Poulett	Bad.
2744	John Vincent	1219 Perry	John Vincent	Satisfactory.
2745	Ed. Joiner	1225 Perry	Ed. Esol	Bad.
2746	George Goens	1240 Perry	Mr. Buckles	Bad.
2747	W. F. Champin	1236 Perry	John Vincent	Bad.
2748	Alfred Clinton	1226 Perry	John Clinton	Bad.
2749	Martin Gordon	1222 Perry St.	John Vincent	Satisfactory.
2750	Elizabeth Schuettler	1220 Perry St.	Elizabeth Schuettler	Bad.
2751	Tad Conn	1214 Perry St.	Chas. Poulett	Bad.
2752	George Davis	1206 Perry St.	George Davis	Bad.
2753	Charles Julian	1204 Perry St.	Clara Steffin	Bad.
2754	J. C. Payton	1202 Perry St.	J. C. Payton	Satisfactory.
2755	Abe Keasling	413 N. 12th St.	Fred Brockman	Bad.
2756	George Kirk	1213 Seminary	Mrs. W. D. Brown	Bad.
2757	Wm. Thomas	1219 Seminary	James Brown	Bad.
2758	Mrs. Mary Moseley	1221 Seminary	James Brown	Bad.
2759	T. L. Chapman	1225 Seminary	James Brown	Bad.
2760	George L. Embry	1227 Seminary	George L. Embry	Bad.
2761	Elvira Carter	1233 Seminary	Elvira Carter	Satisfactory.
2762	Mrs. Sadie Monroe	1234 Seminary	Wm. Schuts	Bad.
2763	Kitty Landis	1226 Seminary	Kitty Landis	Satisfactory.
2764	Hiram Stewart	1220 Seminary	Hiram Stewart	Satisfactory.
2765	Chas. Mallet	1215 Hart St.	Lodge	Bad.
2766	Luther Perry	515 N. 12th St.	Chris. Huffman	Bad.
2767	Mrs. Mary Snyder	1302 Hart St.	Mrs. Mary Snyder	Satisfactory
2768	Wm. Schuettly	609 N. 13th St.	Wm. Schuettly	Satisfactory.
2769	Wm. Stratman	621 N. 13th St.	Wm. Stratman	Bad.
2770	W. C. McCormick	622 N. 14th St.	W. C. McCormick	Satisfactory.
2771	Mrs. Mary Halter	1303 Hart St.	Mrs. Mary Halter	Bad.
2772	John Warren	1323 Hart St.	Judge Cobb	Bad.
2773	John Gardner	610 N. 14th St.	George Shields	Bad.
2774	Louise Broderhouse	618 N. 14th St.	Louise Broderhouse	Bad.
2775	L. A. Presnell	621 N. 14th St.	Herman Schrader	Satisfactory.
2776	Fred Jordan	607 N. 14th St.	Fred Jordan	Bad.
2777	Lewis King	603 N. 14th St.	Mr. Dunn	Bad.
2778	V. B. Davis	527 N. 14th St.	Mr. Wilson	Bad.
2779	Simon Glass	1317 Perry St.	Andy Neeshut	Bad.
2780	Tom Bonchi	1315 Hart St.	Tom Bonchi	Satisfactory.
2781	Richard Bouchie	1304 Hart St.	Richard Bouchie	Bad.
2782	Grant Summit	1301 Hart St.	Grant Summit	Satisfactory.
2783	Chas. Crutchfield	403 N. 13th St.	Chas. Poulett	Bad.
2784	Mollie Monroe	407 N. 13th St.	Chas. Poulett	Bad.
2785	Wm. Hayman	1304 Buntin St.	Wm. Hayman	Bad.
2786	Lizzie Mallot	1312 Buntin St.	Jas. Fries	Satisfactory
2787	Andrew Neeshut	1326 Buntin St.	Andrew Neeshut	Bad.
2788	John Tromley	1330 Buntin St.	Building and loan	Bad.
2789	Ernest Balman	1340 Buntin St.	Ernest Balman	Bad.
2790	Henry G. Thomas	1413 Buntin St.	Henry G. Thomas	Bad.
2791	John McMillen	1415 Buntin St.	John Recker	Bad.
2792	Glen Detty	1419 Buntin St.	John Recker	Satisfactory.
2793	Luther Hall	1339 Buntin St.	J. S. Borden	Satisfactory.
2794	Volney Abel	1337 Buntin St.	Building and Loan	Bad.
2795	John Cardinal	1333 Buntin St.	Smith Hornbeck	Satisfactory.
2796	Walter Wood	1329 Buntin St.	Judge Cobb	Bad.
2797	Smith Hornbeck	1323 Buntin St.	Smith Hornbeck	Bad.
2798	D. M. Chambers	1319 Buntin St.	Dr. Jones	Satisfactory.
2799	Thos. McQuary	1320 Buntin St.	Judge Cobb	Satisfactory.
2800	A. O. Walton	1318 Buntin St.	Jas. Fries	Satisfactory.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2801	Mr. Elmore	1307 Buntin St.	L. A. Meyers	Bad.
2802	Ernest Shoults	1303 Buntin St.	Ernest Shoults	Bad.
2803	Mr. Hauten	1214 Broadway	Mr. Hauten	Bad.
2804	Thomas Moore	1328 Broadway	Mr. Cotty	Bad.
2805	Carl Youngman	1336 Broadway	Carl Youngman	Bad.
2806	Joe Sutton	214 N. 14th St.	Joe Sutton	Satisfactory.
2807	J. P. Ashbrook	1424 Broadway	Mr. Ohnemus	Bad.
2808	Wm. Cardinal	1426 Broadway	Wm. Cardinal	Bad.
2809	Wm. McGraham	1432 Broadway	Wm. McGraham	Satisfactory
2810	Joe Cummins	1436 Broadway	Mr. Borden	Satisfactory
2811	H. T. Wood	1439 Broadway	H. T. Wood	Satisfactory
2812	C. J. Weller	1435 Broadway	C. J. Weller	Bad.
2813	Jas. Lewis	1431 Broadway	Mr. Boeworth	Satisfactory
2814	Mr. Prather	1425 Broadway	Mr. Medcass	Bad.
2815	Roy Scott	1421 Broadway	J. M. Beal	Bad.
2816	Archib Westfall	1339 Broadway	Archib Westfall	Satisfactory
2817	L. Sparrow	1333 Broadway	L. Sparrow	Bad.
2818	U. G. Harris	1329 Broadway	U. G. Harris	Satisfactory
2819	J. W. Williams	1313 Broadway	J. W. Williams	Bad.
2820	Ira Stephens	1328 Buseron	Mrs. Carrie Yalton	Satisfactory
2821	Mrs. Naomi Cox	1332 Buseron	Mrs. Naomi Cox	Satisfactory
2822	D. M. Decker	1336 Buseron	W. M. Swarts	Satisfactory
2823	Will Sexton	1342 Buseron	Will Sexton	Bad.
2824	Harley Corrie	1402 Buseron	Mr. Borden	Satisfactory
2825	T. P. Freeman	1406 Buseron	Grayson & Vandermartin	Satisfactory
2826	Mr. Dutton	1412 Buseron	Earl & Beals	Bad.
2827	Mary Cornwell	1414 Buseron	Wm. Bouchie	Bad.
2828	Mrs. L. Smith	1416 Buseron	Mrs. L. Smith	Satisfactory
2829	Wm. Osborne	1420 Buseron	Mr. Jackman	Bad.
2830	Louis Bokhart	1424 Buseron	Louis Bokhart	Bad.
2831	W. C. Williams	1824 Buseron	J. C. Wise	Satisfactory
2832	Chas. Mallott	15th and Buseron	Frank Brandenburg	Satisfactory
2833			Mrs. Mary Huffman	Satisfactory
2834	John Dunn	1427 Buseron	Jake Beal	Satisfactory
2835	John McHale	1425 Buseron	John McHale	Satisfactory
2836	Marion Pickering	1415 Buseron	Marion Pickering	Satisfactory
2837	J. D. Roof	1409 Buseron	J. D. Roof	Bad
2838	A. H. Huffman	1405 Buseron	A. H. Huffman	Bad.
2839	John Veike	1403 Buseron	John Veike	Bad.
2840	Chas. Cartwright	1335 Buseron	Chas. Cartwright	Bad.
2841	T. L. Vachet	1301 Buseron	Henry Gartner	Satisfactory
2842	Sol. Robert	1327 Buseron	Building and Loan	Bad.
2843	Wm. Thompson	1331 Buseron	Wm. Thompson	Satisfactory
2844	Frank Brandenburg	1510 Main St.	Frank Brandenburg	Satisfactory
2845	Mr. Gillett		Mr. Boltman	Satisfactory
2846	Hannah Bouchie	1436 Main St.	D. T. Halo	Bad.
2847	E. J. Fraumann	1430 Main St.	J. B. Fraumann	Bad.
2848	Ed. McCormick	1424 Main St.	Ed. McCormick	Satisfactory
2849	A. M. Updyke	1414 Main St.	Grayson & Vandermartin	Satisfactory
2850	John G. Hendrich	1408 Main St.	Grayson & Vandermartin	Satisfactory
2851	H. W. Vandermartin	1404 Main St.	H. W. Vandermartin	Satisfactory
2852	Harry Allemang	1312 Main St.	John Lang	Bad.
2853	Henry Thieman	1310 Main St.	Mr. Pennington	Satisfactory
2854	Henry Pruesmer	1308 Main St.	Henry Pruesmer	Satisfactory
2855	Mrs. Mary Horan	1301 Main St.	Mrs. Mary Horan	Satisfactory
2856	W. A. Pinkstaff	1313 Main St.	W. A. Pinkstaff	Satisfactory
2857	K. T. Simpson	1317 Main St.	K. T. Simpson	Satisfactory
2858	Roscoe Swan	1335 Main St.	John Durham	Bad.
2859	Hedges Grocery Co.	14th and Main Sts.		Satisfactory
2860	Louis Rasche	1421 E. Main St.	Louis Rasche	Satisfactory
2861	Jas. McCracken	1531 Vigo St.	Jas. McCracken	Bad.
2862	Mrs. Rosa Zurheid	1428 Vigo St.	Mrs. Rosa Zurheid	Satisfactory
2863	Chas. Lantz	1420 Vigo St.	Mrs. Sadie Kramier	Satisfactory
2864	Ed. Gwin	1425 Vigo St.	Mrs. Kramier	Satisfactory
2865	Geo. H. Gray	1409 Vigo St.	Mrs. Kramier	Bad.
2866	J. B. Fraumann	1407 Vigo St.	Mrs. Kramier	Satisfactory
2867	Andy Leffer	116 S. 14th St.	Andy Leffer	Satisfactory
2868	Fred Lechner	120 S. 14th St.	Will Chambers	Bad.
2869	Ed. Rumer	124 S. 14th St.	Ed. Rumer	Satisfactory
2870	Henry Yocum	1410 Church St.	Albert Gartner	Bad.
2871	Louis J. Morgan	1416 Vigo St.	Albert Gartner	Satisfactory
2872	T. J. Fields	117 S. 14th St.	L. A. Meyers	Bad.
2873	Louis Frederick	121 S. 14th St.	L. A. Meyers	Bad.
2874	Chas. Bowers	125 S. 14th St.	L. A. Meyers	Bad.
2875	John Memering	1326 Church St.	Fred Winman	Bad.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2876	Louis Freshley	1320 Church St.	Fred Winman	Bad.
2877	David Hornbeck	1323 Church St.	Mrs. Clara Becker	Bad.
2878	D. P. Howerton	1321 Church St.	Harry Sohms	Bad.
2879	John Flack	1319 Church St.	John Flack	Satisfactory.
2880	Roy Jacobus	1317 Church St.	Mr. Durham	Satisfactory.
2881	H. C. Williams	28 S. 13th St.	H. C. Williams	Bad.
2882	Harry Hornbeck	25 S. 14th St.	Louis Durham	Bad.
2883	J. W. Turner	1337 Vigo St.	J. W. Turner	Bad.
2884	T. David La Duke	1325 Vigo St.	T. David La Duke	Bad.
2885	T. P. Willis	102 S. 13th St.	Albert Huffman	Bad.
2886	Frank Truckey	106 S. 13th St.	Frank Truckey	Bad.
2887	Fred Winman	118 S. 13th St.	Fred Winman	Bad.
2888	Jas. Hedges	202 S. 13th St.	August Thais	Bad.
2889	August Thais	210 S. 13th St.	August Thais	Bad.
2890	Louis Althof	302 S. 13th St.	Louis Althos	Bad.
2891	Louis Williams	1315 Barnett St.	Louis Williams	Bad.
2892	G. W. Robinson	1321 Barnett St.	Geo. Shields	Bad.
2893	Homes Shaw	1325 Barnett St.	Homes Shaw	Bad.
2894	Vienna Dear	1329 Barnett St.	Vienna Dear	Bad.
2895	Theo Carrie	317 S. 14th St.	J. L. Buckles	Satisfactory.
2896	Ed. Gerkin	1414 Nicholas St.	Wm. Bouchie	Bad.
2897	Thos. Murphy	1541 Nicholas St.	Simpson Lumber Co	Bad.
2898	John Allen	427 S. 15th St.	Simpson Lumber Co	Satisfactory.
2899	John Oilden	425 S. 15th St.	Simpson Lumber Co.	Bad.
2900	Mrs. Rosa Thomas	1411 Nicholas St.	Mr. Borden	Satisfactory.
2901	Tom Nash	1409 Nicholas St.	Greyson & Vandermartin	Satisfactory.
2902	Jess West	1407 Nicholas St.	Greyson & Vandermartin	Satisfactory.
2903	Victor Donnell	1401 Nicholas St.	John Mack	Satisfactory.
2904	J. B. Hastings	1331 Nicholas St.	G. Smith	Satisfactory.
2905	Wm. Henderson	502 S. 13th St.	Garrett Smith	Satisfactory.
2906	Sampson Catt	404 S. 13th St.	Fred Winkman	Bad.
2907	Mrs. Maude Connors	320 S. 13th St.	Herman Boltman	Bad.
2908	Mrs. Mary Strautman	311 S. 13th St.	Mrs. Mary Strautman	Satisfactory.
2909	George Stanett	504 S. 13th St.	Ben Anton	Satisfactory.
2910	Ben Anton	520 S. 13th St.	Ben Anton	Satisfactory.
2911	Mrs. Bertha Allison	1305 Bayou St.	Mr. Risch	Satisfactory.
2912	Harrison	1315 Bayou	Mr. Harrison	Satisfactory.
2913	B. Tramey	1312 Bayou	Garret Smith	Satisfactory.
2914	Gus Moninee	1319 Bayou	Greyson & Vandermartin	Bad.
2915	Thos. Cullivan	1321 Bayou	Greyson & Vandermartin	Satisfactory.
2916	John P. Norton	1323 Bayou	Greyson & Vandermartin	Bad.
2917	Pete Bouvy	1325 Bayou	Pete Bouvy	Satisfactory.
2918	Ernest Sanders	1404 Bayou	Rev. Cohle	Satisfactory.
2919	Mr. Aker	1406 Bayou	Garret Smith	Satisfactory.
2920	Frank Hedden	1410 Bayou	Mr. Montgomery	Satisfactory.
2921	Fred Doll	1416 Bayou	Joe Spade	Satisfactory.
2922	Thos. Decker	1420 Bayou	Greyson & Vandermartin	Bad.
2923	M. Nightingale	1428 Bayou	M. Nightingale	Satisfactory.
2924	John Matthews	1432 Bayou	G. Smith	Satisfactory.
2925	Jas. Carmody	1436 Bayou	Jas. Carmody	Satisfactory.
2926	Garret Smith	1429 Bayou	Garret Smith	Satisfactory.
2927	Ora Cooper	1527 Bayou	Ora Cooper	Satisfactory.
2928	Ernest Bono	607 S. 16th St.	Ernest Bono	Satisfactory.
2929	Chas. Gains	1609 Bayou	Mr. Grimes	Satisfactory.
2930	John Farlay	1610 Prairie St.	Mr. Hall	Satisfactory.
2931	Chas. Buchanan	1625 Prairie St.	Chas. Buchanan	Satisfactory.
2932	Henry Richardville	1627 Prairie St.	Henry Richardville	Satisfactory.
2933	Mr. Cooper	Prairie and 17th		Satisfactory.
2934	Eliza Robinson	1634 Parkison	Eliza Robinson	Satisfactory.
2935	F. Noe	1624 Parkison	Greyson & Vandermartin	Satisfactory.
2936	Rebecca Allen	1618 Parkison	Rebecca Allen	Satisfactory.
2937	Ben Kennedy	1612 Parkison	Hannah Bouchie	Satisfactory.
2938	W. H. Furguson	1601 Prairie	W. H. Furguson	Satisfactory.
2939	Mike Whitstein	1531 Prairie St.	Mike Whitstein	Satisfactory.
2940	Harvey Cook	1527 Prairie St.	Harvey Cook	Satisfactory.
2941	O. S. Potts	1518 Prairie St.	Mr. Hamcke	Satisfactory.
2942	Clarence Rinehart	1516 Prairie St.	W. H. Rumer	Satisfactory.
2943	W. M. Smith	1515 Parkison	Clarence Kessinger	Bad.
2944	C. C. Lockman	701 S. 15th St.	Jas. French	Bad.
2945	C. F. Dare	1514 Prairie St.	C. F. Dare	Satisfactory.
2946	Dan Dumble	1340 Prairie St.	Mr. Riley	Satisfactory.
2947	Geo. W. Young	1330 Prairie St.	Mr. Buckles	Bad.
2948	S. Page	1328 Prairie St.	Felix Gremour	Bad.
2949	Frank Gremour	1326 Prairie St.	Frank Gremour	Satisfactory.
2950	Alonso Abel	1320 Prairie St.	Mrs. Joyce	Bad.

TABLE No. 4—Continued.

Sample Number.	Resident.	Address.	Owner of Property.	Remarks.
2951	W. H. McCormick	1319 Prairie St.	W. H. McCormick	Satisfactory.
2952	John Stewart	1325 Prairie St.	Francis Purcell	Satisfactory.
2953	Fred Steimels	1327 Prairie St.	Clara Brokhage	Satisfactory.
2954	Lawrence Bouchie	1331 Prairie St.	G. Hofkampin.	Satisfactory.
2955	John Ray	1335 Prairie St.	I. G. Worley	Satisfactory.
2956	Jas. Patrick Hart	1415 Prairie St.	Jas. P. Hart	Satisfactory.
2957	Jesse Williams	1419 Prairie St.	Jesse Williams	Satisfactory.
2958	Robert Hughes	1421 Prairie St.	Jesse Williams	Satisfactory.
2959	Adelia Bono	1420 Parkison.	Adelia Bono	Satisfactory.
2960	Kamp Lomax	1418 Parkison.	J. L. Buckles	Satisfactory.
2961	Wendell Meyer	1302 Parkison.	Wendell Meyer	Satisfactory.
2962	W. E. King	1326 Parkison.	E. Ledgerwood	Satisfactory.
2963	J. M. Kelley	1402 Parkison.	G. Quian	Satisfactory.
2964	Geo. Sherem	1406 Parkison.		Satisfactory.
2965	Chas. Bono	1410 Parkison.		Satisfactory.
2966	John Lane	1417 Parkison.	Mr. Rumer	Satisfactory.
2967	Walter Andrews	1415 Parkison.	Walter Andrews	Satisfactory.
2968	Harry Fields	1409 Parkison.	Mr. Buckles	Bad.
2969	Mr. Lader	1405 Parkison.	Mr. Buckles	Satisfactory.
2970	Ben Lamping	1403 Parkison.	Mr. Buckles	Satisfactory.
2971	Eliza J. Prichert	1402 Wheeler.	Jake Beal	Bad.
2972	Harvey Guess	1404 Wheeler.	Harvey Guess	Satisfactory.
2973	W. R. Holcomb	1414 Wheeler.	W. R. Holcomb	Satisfactory.
2974	Joseph Wetsel	1430 Wheeler.	Joseph Wheeler	Bad.
2975	Jas. Miller	1441 Wheeler.	Joe Hershey	Satisfactory.
2976	Marion Adkins	828 S. 15th St.	G. W. Wiseman	Satisfactory.
2977	Jos. Frey	1518 Wheeler.	Jos. Frey	Satisfactory.
2978	Peter Cannon	1517 Wheeler.	Peter Cannon	Satisfactory.
2979	Mrs. Elisabeth Bronson	1614 Wheeler.	Mrs. E. Bronson	Satisfactory.
2980	Chas. Phillips	1618 Wheeler.	Louis Meyer	Satisfactory.
2981	J. N. Goodman	1030 17th St.	Mr. Burden	Satisfactory.
2982	Jas. Yerkes	1600 Mentor	Mr. Schlusser	Bad.
2983	J. Russiaville	16— Mentor	John Thorn	Satisfactory.
2984	Unice Nelson	1626 Mentor	Marion Glen	Satisfactory.
2985	Geo. Wiseman	1620 Mentor	Geo. Wiseman	Satisfactory.
2986	John Thorn	1614 Mentor	John Thorn	Satisfactory.
2987	Henry Bollman	1612 Mentor	Capt. Hersting	Satisfactory.
2988	Thomas McHoney	17th and Laplante.	Alex. Runyon	Satisfactory.
2989	Chas. Richardville	1536 Mentor	Chas. Richardville	Satisfactory.
2990	C. R. Staley	1532 Mentor	L. A. Meyers	Bad.
2991	John Furguson	1530 Mentor	L. A. Meyers	Bad.
2992	John Willy	1528 Mentor	L. A. Meyers	Satisfactory.
2993	R. F. Abrassart	1516 Laplante.	Grayson & Vandermartin	Satisfactory.
2994	F. J. Gugnol	1528 Laplante.	Grayson & Vandermartin	Satisfactory.
2995	F. M. Andrews	1428 Willow	Mr. Hunkler	Satisfactory.
2996	Margaret Phillips	1424 Willow	Mr. Decker	Satisfactory.
2997	John K. Miller	1410 Willow	Henry Knowles	Satisfactory.
2998	W. H. Wagner	1402 Willow	Henry Knowles	Bad.
2999	Wm. Sheppard	1319 Parkison.	Joe Zeph	Satisfactory.
3000	J. W. Gernsey	1303 Parkison.	Mr. Klein	Satisfactory.
3001	Indiana Board and Filler Co.			Bad.
3002	National Rolling Mill Co.			Satisfactory.
3003	Vincennes Bridge Co.			Satisfactory.
3004	Vincennes Furniture Mfg. Co.			Satisfactory.
3005	Old Vincennes Distillery Co.			Satisfactory.
3006	Central Foundry Co., No. 1.			Satisfactory.
3007	Central Foundry Co., No. 2.			Satisfactory.
3008	Indiana Corrugated Paper Box Co.			Satisfactory.
3009	Hartman Manufacturing Co.			Satisfactory.
3010	Vincennes Board and Paper Company			Satisfactory.
.....	W. F. Blatherwick	320 Barnett St.	W. F. Blatherwick	Bad.

TABLE No. 5.  
Reports of Unsanitary Privies.

Report Number.	Resident.	Address.	Property Owner.	Complaint.	Sample Number.
1	George Goldring.	309 W. Lyndale.	Mr. Cohan.	No privy.	14
2	G. C. Ryan.	313 W. Lyndale.	Mr. Morton.	Unsanitary privy.	16
3	Ed. H. Oerman.	— W. Lyndale.	Mr. Montgomery.	Unsanitary privy.	59
4	Mrs. Horton.	124 W. Lyndale.		Unsanitary privy.	102
5	George Drain.	119 E. Swartzel.	Harry Wright.	Unsanitary privy.	113
6	Mrs. J. Henderson.	20 E. Swartzel.	Mr. Vaughan.	Unsanitary privy.	152
7	Geo. Critchlow.	22 E. Swartzel.	George Tott.	Unsanitary privy.	153
8	Geo. Bell.	110 E. Swartzel.	Mrs. Moxidin.	Unsanitary privy.	158
9	T. Fowler.	22 W. Reel.	Mrs. Adams.	Unsanitary privy.	176
10	W. H. Redwine.	15 E. Reel.	Ed. Orman.	Unsanitary privy.	185
11	J. Eastridge.	103 E. Reel.	Mr. Adams.	Unsanitary privy.	191
12	F. Shuff.	107 E. Reel.	Mr. Adams.	Unsanitary privy.	192
13	T. Thompson.	111 E. Reel.	Mr. Adams.	Unsanitary privy.	193
14	R. Myers.		Mr. Pyles.	Unsanitary privy.	194
15	C. A. Roach.	139 E. Lyndale.	Mr. Corey.	Unsanitary privy.	70
16	John Landis.	109 W. Reel.	Grayson & Vander-		
			martin.	Unsanitary privy.	202
17	W. H. Robb.	23 W. Reel.	L. Wiser.	Unsanitary privy.	206
18	H. Foreman.	19 W. Reel.	Mrs. Sullinger.	Unsanitary privy.	207
19	W. Sharp.	11 W. Reel.	Mrs. Sullinger.	Unsanitary privy.	209
20	J. Raney.	20 E. Reel.	Mrs. M. A. Swartzel.	Unsanitary privy.	212
21	W. Sage.	110 E. Reel.		Unsanitary privy.	214
22	H. Luking.	35 E. Eberwine.	H. Luking.	Unsanitary privy.	222
23	R. Dotson.	27 E. Eberwine.	Wm. Riddle.	Unsanitary privy.	223
24	Martin Goldman.	437 W. Eberwine.	Mr. Ritterskamp.	Unsanitary privy.	221
25	Willie Cargal.	425 W. Eberwine.	J. Riddles.	Unsanitary privy.	233
26	W. Rodermal.	321 W. Eberwine.	W. Rodermal.	Unsanitary privy.	237
27	J. F. Dickson.	317 W. Eberwine.	Mr. Voan.	Unsanitary privy.	238
28	B. Wilks.	303 W. Eberwine.	Mrs. Borden.	Unsanitary privy.	241
29	W. H. Williams.	203 W. Eberwine.	W. H. Williams.	Unsanitary privy.	244
30	G. Timmons.	123 W. Eberwine.	C. Ritterskamp.	Unsanitary privy.	246
31	J. W. Merrill.	105 W. Eberwine.	Mr. Boyd.	Unsanitary privy.	247
32	J. Ash.	112 W. Eberwine.	Mr. Powell.	Unsanitary privy.	248
33	W. Kitchal.	108 W. Eberwine.	Mr. Powell.	Unsanitary privy.	249
34	J. Dover.	104 W. Eberwine.	Mr. Powell.	Unsanitary privy.	250
35	J. McKeen.	11 W. Eberwine.	Mr. Powell.	Unsanitary privy.	258
36	Rich Ray.	440 W. Jefferson.	B. B. Johnson.	Unsanitary privy.	261
37	J. Dotson.	417 W. Jefferson.	Judge Cobb.	Unsanitary privy.	265
38	W. H. Brubeck.	411 W. Jefferson.		Unsanitary privy.	266
39	Joe Arthur.	407 W. Jefferson.	W. White.	Unsanitary privy.	267
40	J. P. Troncin.	402 W. Jefferson.		Unsanitary privy.	269
41	W. Benjamin.	333 W. Jefferson.	Mr. Martindale.	Unsanitary privy.	271
42	J. E. Milligan.	28 W. Jefferson.		Unsanitary privy.	276
43	E. Gilledy.	31 E. Jefferson.		Unsanitary privy.	282
44	F. Gott.	115 E. Jefferson.	Mr. Buckles.	Unsanitary privy.	283
45	H. C. Levell.	102 E. Jefferson.	Mr. Levell.	Unsanitary privy.	288
46	W. E. Smith.	202 W. Eberwine.	Tom Lauder milk.	Unsanitary privy.	290
47	Mrs. E. Fitts.	337 W. Minneapolis.	Mr. Roache.	Unsanitary privy.	297
48	C. Welch.	303 W. Minneapolis.	G. Swartzel.	Unsanitary privy.	301
49	A. Smith.	221 W. Minneapolis.	A. Brown.	Unsanitary privy.	303
50	G. Reel.	15 E. Minneapolis.		Unsanitary privy.	309
51	C. Leweyn.	16 E. Minneapolis.		Unsanitary privy.	311
52	R. Johnson.	136 E. Minneapolis.		Unsanitary privy.	317
53	T. Simmons.	2231 N. Day.	Mr. Borden.	Unsanitary privy.	318
54	H. Joyce.	2227 N. Day.		Unsanitary privy.	319
55	F. M. Carmichael.	20 E. Eberwine.	W. T. Busby.	Unsanitary privy.	322
56	R. Smith.	28 E. Eberwine.		Unsanitary privy.	323
57	O. Goldman.	152 E. Jefferson.	P. McCarty.	Unsanitary privy.	330
58	J. Dunham.	174 E. Jefferson.	Mr. Evering.	Unsanitary privy.	332
59	Mrs. M. Martin.	180 E. Jefferson.	Mr. Fresie.	Unsanitary privy.	333
60	D. McGaric.	2356 N. Second.	Al. Smith.	Unsanitary privy.	340
61	A. Dillon.	2420 N. Second.	Mrs. Dillon.	Unsanitary privy.	343
62	Mrs. Lawhead.	2424 N. Second.		Unsanitary privy.	344
63	Mrs. M. Thompson.	2428 N. Second.	E. Everly.	Unsanitary privy.	345
64	John Shoults.	2602 N. Second.		Unsanitary privy.	347
65	G. Welcher.	174 E. New Albany.		Unsanitary privy.	350
66	M. Anders.	430 W. New Albany.		Unsanitary privy.	352
67	J. Schaller.	413 W. New Albany.		Unsanitary privy.	355
68	A. E. Dennison.	412 W. New Albany.		Unsanitary privy.	356
69	L. Murphy.	311 W. New Albany.		Unsanitary privy.	362
70	O. C. Organ.	322 W. New Albany.	Mr. Borden.	Unsanitary privy.	363
71	J. Biggs.	306 W. New Albany.		Unsanitary privy.	366
72	R. Alexander.	227 W. New Albany.	Ed. Carl.	Unsanitary privy.	267

TABLE No. 5—Continued.

Report Number.	Resident.	Address.	Property Owner.	Complaint.	Sample Number.
73	B. Bower	115 W. New Albany	Mrs. Cox	Unsanitary privy	376
74	C. Carter	102 W. New Albany	Mrs. Brown	Unsanitary privy	378
75	J. E. Cooper	28 E. New Albany		Unsanitary privy	379
76	H. Ashley	310 Chicago	A. Borden	Unsanitary privy	384
77	Mr. Kidwell	2521 N. Day St.	Mr. Shultz	Unsanitary privy	403
78	E. Rasico	18 W. New Albany		Unsanitary privy	413
79	W. Southers	14 W. New Albany	Mr. McCarty	Unsanitary privy	414
80	C. Wheeler	238 W. Portland	H. Oliphant	Unsanitary privy	423
81	W. H. Johnson	230 W. Portland	G. Fuller	Unsanitary privy	434
82	A. Doer	7 E. Portland	Mr. McAndrews	Unsanitary privy	446
83	G. Felton	317 W. St. Clair	Mr. Borden	Unsanitary privy	461
84	O. Roadarmael	211 W. St. Clair	Mr. Schaffer	Unsanitary privy	462
85	W. C. Williams	207 W. St. Clair	Mr. Purcell	Unsanitary privy	463
86	J. Graham	129 W. St. Clair	Mr. Watson	Unsanitary privy	464
87	E. Mustin	113 W. St. Clair	Mr. Borden	Unsanitary privy	468
88	F. R. Norris	105 W. St. Clair	Mr. Borden	Unsanitary privy	470
89	John Haton	7 W. St. Clair		Unsanitary privy	473
90	E. Stiles	26 E. St. Clair	Judge Cobb	Unsanitary privy	478
91	G. M. Faulkner	112 E. St. Clair	Mr. Vanmeter	Unsanitary privy	485
92	C. S. Bittle	124 E. St. Clair	Mr. Townsend	Unsanitary privy	488
93	W. Carraway	210 W. St. Clair	Judge Cobb	Unsanitary privy	493
94	W. Delaware	311 W. St. Clair	Judge Cobb	Unsanitary privy	494
95	W. Mauck	302 W. St. Clair	Mrs. Chapel	Unsanitary privy	495
96	H. Holman	1510 N. Sly	Mrs. Chapel	Unsanitary privy	496
97	W. Massey	1620 N. 2nd St.	Mr. Terrell	Unsanitary privy	521
98	C. Collins	19 W. Sycamore	L. Meyer	Unsanitary privy	542
99	B. Godfrey	1406 Chestnut	Miss Ham	Unsanitary privy	548
100	W. Taylor	221 W. Sycamore	A. Shury	Unsanitary privy	550
101	Mary J. Rose	1511 Terre Haute	Mr. Eech	Unsanitary privy	551
102	L. Daily	303 W. Sycamore	Mr. Folk	Unsanitary privy	555
103	J. Dunham	1507 Sly	H. Ash	Unsanitary privy	556
104	R. Smiley	20 W. Sycamore	Mr. Bock	Unsanitary privy	562
105	G. Ward	14 W. Sycamore	Mr. Borden	Unsanitary privy	563
106	R. Little	1420 N. 2nd St.	Tom Murphy	Unsanitary privy	572
107	B. Tevorn	110 E. Locust	Squire Becker	Unsanitary privy	577
108	C. O'Dell	36 E. Locust	Mr. Borden	Unsanitary privy	579
109	Ed. Dodd	23 W. Locust	Mr. Borden	Unsanitary privy	593
110	J. Young	117 E. Locust	Mrs. Null	Unsanitary privy	608
111	J. Martin	1302 N. 2nd St.	C. Dawson	Unsanitary privy	629
112	Mrs. Hotten	18 Railroad	Mrs. Ham	Unsanitary privy	633
113	A. J. Davis	1223 Short St.	Mr. Borden	Unsanitary privy	664
114	T. W. Perry	1308 Short St.	J. H. Polley	Unsanitary privy	670
115	J. Harding	1318 Short St.	Mr. Marshall	Unsanitary privy	671
116	C. Hobbs	1112 Short St.	Mr. Tromley	Unsanitary privy	678
117	C. Blakeley	1127 Chestnut	John Rich	Unsanitary privy	704
118	H. H. Hanover	1117 Chestnut	Mr. Ebner	Unsanitary privy	706
119	G. Quinn	922 N. 1st	Mr. Pomel	Unsanitary privy	716
120	Chas. Tharp	820 N. 2nd	Mr. Murphy	Unsanitary privy	743
121	A. Kaiser	711 N. 2nd	Mr. Pomel	Unsanitary privy	763
122	Max Silverman	908 N. 3rd	O. Ritterkamp	Unsanitary privy	767
123	John Harding	906 N. 3rd	O. Ritterkamp	Unsanitary privy	768
124	Mrs. G. McBee	902 N. 3rd	O. Ritterkamp	Unsanitary privy	769
125	German White	216 E. Harrison	O. Ritterkamp	Unsanitary privy	770
126	J. A. Hoarding	223 E. Soott	Joe Smith	Unsanitary privy	775
127	B. Whalen	903 N. 3rd	Mrs. Ham	Unsanitary privy	781
128	Jacob Fry	907 N. 3rd	Mrs. Ham	Unsanitary privy	782
129	Mrs. S. Blevins	319 Hickman	Mrs. Gauss	Unsanitary privy	788
130	S. E. Morgan	1523 B. 2nd	Ed. Watson	Unsanitary privy	809
131	P. S. Fisher	1917 N. 2nd	P. S. Fisher	Unsanitary privy	833
132	Mrs. B. Longsdorf	217 Roumilion St.	Mrs. Longsdorf	Unsanitary privy	836
133	W. S. Coleman	218 Roumilion St.	Dr. Prather	Unsanitary privy	841
134	C. Moore	2167 N. 2nd	J. King	Unsanitary privy	850
135	T. Shepherd	2201 N. 2nd St.	Mr. Borden	Unsanitary privy	856
136	H. M. Williams	2207 N. 2nd	Mr. Borden	Unsanitary privy	858
137	W. A. Johnson	2231 N. 2nd	Mr. Meyers	Unsanitary privy	864
138	J. H. Utterbach	2309 N. 2nd	Mr. Leonard	Unsanitary privy	867
139	Rose Raburn	2315 N. 2nd	Mr. Meyers	Unsanitary privy	869
140	T. Conner	510 Manila	Mr. Borden	Unsanitary privy	873
141	H. F. McClure	524 Manila	Mr. Borden	Unsanitary privy	875
142	Joe Norris	2122 N. 2nd St.	Mr. Borden	Unsanitary privy	879
143	J. Clark	2126 N. 6th St.	Mr. Borden	Unsanitary privy	880
144	John King	222 E. St. Clair	Mr. Meyers	Unsanitary privy	881
145	John Baker	511 Meyers St.	Roy Leonard	Unsanitary privy	887
146	B. Bang	506 Cullop	Mr. Schuler	Unsanitary privy	889
147	F. T. Goodaker	513 Brouillette	Mr. Borden	Unsanitary privy	893

TABLE No. 5—Continued.

Report Number.	Resident.	Address.	Property Owner.	Complaint.	Sample Number.
148	J. F. Dodson	509 Brouillette	E. Eastridge	Unsanitary privy	894
149	Mrs. Goodwin	1918 N. 6th St.	Dr. Prather	Unsanitary privy	901
150	J. Right	1902 N. 6th St.	Dr. Prather	Unsanitary privy	902
151	O. Fuder	1926 N. 6th St.	Joe Borden	Unsanitary privy	903
152	F. Craig	525 Rousillion	Joe Borden	Unsanitary privy	904
153	A. D. Stodghill	521 Rousillion	Joe Borden	Unsanitary privy	906
154	G. Rupe	511 Rousillion	Mr. Morris	Unsanitary privy	907
155	W. H. Donaldson	502 Rousillion	Mr. Bockman	Unsanitary privy	908
156	E. Stafford	508 Rousillion	Joe dorden	Unsanitary privy	909
157	F. Miley	512 Rousillion	Lawyer Weems	Unsanitary privy	910
158	George Hand	514 Rousillion	Mr. Borden	Unsanitary privy	911
159	James Kidwell	509 Manila	Mr. Adams	Unsanitary privy	917
160	Mrs. Brocksmith	512 Kessinger	Mr. Cobble	Unsanitary privy	923
161	Mrs M. C. Adams	510 Kessinger	Mr. Borden	Unsanitary privy	924
162	John Fields	511 Kessinger	John Brown	Unsanitary privy	925
163	C. Kidwell	312 Kessinger	Mr. Borden	Unsanitary privy	926
164	D. M. Metaker	629 Kessinger	Mr. Borden	Unsanitary privy	928
165	G. Foeter	631 Kessinger	Mr. Borden	Unsanitary privy	929
166	R. Carmody	633 Kessinger	Mr. Borden	Unsanitary privy	930
167	Ama Able	635 Kessinger	Mr. Borden	Unsanitary privy	931
168	M. Morton	636 Kessinger	Mr. Borden	Unsanitary privy	932
169	N. De Moss	649 Kessinger	Mr. Borden	Unsanitary privy	933
170	D. Mallory	646 Manila	Mr. Borden	Unsanitary privy	935
171	John Gerkes	641 Manila	Lawyer Meyers	Unsanitary privy	939
172	J. Richardson	637 Manila	Lawyer Meyers	Unsanitary privy	940
173	J. Talley	2105 N. 6th	Mr. Borden	Unsanitary privy	942
174	D. Dougherty	631 Manila	Mr. Borden	Unsanitary privy	944
175	J. Morris	639 Manila	Mr. Borden	Unsanitary privy	945
176	J. Grisano	2019 N. 6th St.	Mr. Borden	Unsanitary privy	949
177	C. Burns	2017 N. 6th	Mr. Borden	Unsanitary privy	950
178	A. Whitmer	620 Rousillion	J. P. L. Weems	Unsanitary privy	952
179	W. O. McCord	628 Rousillion	Mr. Borden	Unsanitary privy	954
180	Ed. King	642 Rousillion	Mr. Borden	Unsanitary privy	956
181	H. Lialow	623 Rousillion	Mr. Borden	Unsanitary privy	962
182	J. Lincoln	616 Brouillette	N. D. Purcell	Unsanitary privy	966
183	Mary Compton	622 Brouillette	Mr. Borden	Unsanitary privy	967
184	A. Neal	626 Brouillette	Mr. Montgomery	Unsanitary privy	968
185	G. Reinbold	632 Brouillette	J. E. Rogers	Unsanitary privy	969
186	Mrs. G. Raabe	640 Brouillette	J. E. Rogers	Unsanitary privy	971
187	E. Highfill	617 Brouillette	C. J. Wagner	Unsanitary privy	976
188	H. Monroe	611 Brouillette	Dr. Napp	Unsanitary privy	977
189	W. T. Atwood	603 Brouillette	C. Adams	Unsanitary privy	979
190	I. W. Faith	612 Cullop	Mr. Ritterskamp	Unsanitary privy	981
191	James Twell	628 Cullop	Mr. Ford	Unsanitary privy	984
192	J. Layman	635 Cullop	Lawyer over 10c store	Unsanitary privy	990
193	S. Stanaford	621 Cullop	Mr. Gillespie	Unsanitary privy	992
194	W. Grider	613 Cullop	Mrs. O'Donnell	Unsanitary privy	998
195	W. Welb	606 Volmer	Mr. Conant	Unsanitary privy	999
196	J. Bailey	612 Volmer	Judge Cobb	Unsanitary privy	999
197	H. McCoy	620 Volmer	Mr. Cummins	Unsanitary privy	1000
198	L. Kensler	622 Volmer	Judge Cobb	Unsanitary privy	1001
199	J. Childes	636 Volmer	Mr. Volmer	Unsanitary privy	1004
200	A. Lane	647 Volmer	Judge Cobb	Unsanitary privy	1009
201	C. Townsly	643 Volmer	Dr. Stuart	Unsanitary privy	1010
202	K. T. McDonald	617 Volmer	Judge Cobb	Unsanitary privy	1014
203	C. Grabbe	613 Volmer	Judge Cobb	Unsanitary privy	1015
204	J. Jones	603 Volmer	Judge Cobb	Unsanitary privy	1017
205	J. Auberry	1661 N. 6th	J. Aubrey	Unsanitary privy	1018
206	A. Gripenstroh	608 Meyer	Judge Cobb	Unsanitary privy	1019
207	Ed. Wampler	614 Meyer	Judge Cobb	Unsanitary privy	1020
208	C. Grider	618 Meyer	Judge Cobb	Unsanitary privy	1021
209	H. Fravel	638 Meyer	Mr. Branning	Unsanitary privy	1024
210	J. Carnahan	650 Meyer	Mr. Townsly	Unsanitary privy	1027
211	E. Gibbs	608 St. Clair	E. Gibbs	Unsanitary privy	1039
212	A. Southers	1520 N. 11th	Mr. Borden	Unsanitary privy	1045
213	J. Baker	1510 N. 4th St.	John Young	Unsanitary privy	1048
214	C. Cooper	142 N. 4th	Miss Feifer	Unsanitary privy	1056
215	H. L. Williams	404 Locust	John Wensel	Unsanitary privy	1058
216	D. Costello	418 Locust	C. H. Travis	Unsanitary privy	1060
217	C. Ham	1410 N. 3rd	Mrs. Murphy	Unsanitary privy	1065
218	T. Litherland	1212 N. 3rd	Mrs. Rawlings	Unsanitary privy	1075
219	W. Clark	214 Center	Mrs. Killjoy	Unsanitary privy	1077
220	J. S. Rice	220 Depot	Mrs. McAndrews	Unsanitary privy	1084
221	A. W. Douglas	303 N. 4th	Mrs. McClure	Unsanitary privy	1086
222	J. M. Tisdale	1521 N. 3rd	Tischner	Unsanitary privy	1092



TABLE No. 5—Continued.

Report Number.	Resident.	Address.	Property Owner.	Complaint.	Sample Number.
223	J. W. Weems	1411 N. 3rd.	Mr. Leonard	Unsanitary privy	1097
224	R. G. Stewart	1403 N. 3rd.	John Risch	Unsanitary privy	1099
225	C. Brewer	1333 N. 3rd.	Mrs. Menaugh	Unsanitary privy	1101
226	J. Chadwick	1329 N. 3rd.	Wm. Jordan	Unsanitary privy	1102
227	Mrs. Broomer	1321 N. 3rd.	G. W. Mullin	Unsanitary privy	1103
228	N. Mayes	1313 N. 3rd.	Mr. McVittie	Unsanitary privy	1105
229	Mrs. J. D. Rollins	311 Depot	Mr. Risch	Unsanitary privy	1109
230	Mrs. A. Borden	309 Depot	Mr. Borden	Unsanitary privy	1110
231	F. Hartman	320 Center	Mr. Borden	Unsanitary privy	1115
232	H. Furman	1404 N. 4th.	Mr. Becker	Unsanitary privy	1121
233	Mrs. R. S. Culbertson	401 Locust	Dr. Maxen	Unsanitary privy	1128
234	R. H. Summers	903 N. 5th.	J. Risch	Unsanitary privy	1142
235	C. Fellow	928 N. 6th.	Ed. Watson	Unsanitary privy	1146
236	W. Rumer	1007 N. 6th.	Mr. Sheppard	Unsanitary privy	1148
237	G. T. Siegford	1025 N. 7th.	J. Onimus	Unsanitary privy	1151
238	G. Russell	1021 N. 7th.	Tom Murphy	Unsanitary privy	1152
239	N. Pfhol	1028 Fairground.	Tom Murphy	Unsanitary privy	1154
240	E. Clements	1018 N. 7th.	Ed. Watson	Unsanitary privy	1158
241	T. H. Crawford	409 Scott	Mrs. E. J. Loten	Unsanitary privy	1172
242	J. M. Vance	403 Scott	Mrs. E. J. Loten	Unsanitary privy	1173
243	E. Phillips	713 N. 4th.	Mrs. E. J. Loten	Unsanitary privy	1174
244	J. DeCraete	424 Scott	Mrs. E. J. Loten	Unsanitary privy	1177
245	C. B. Wilks	913 N. 6th St.	Mr. Fomier	Unsanitary privy	1191
246	Allen Myers	711 N. 7th.	Mr. Weisenberger	Unsanitary privy	1210
247	John Lackey	709 N. 7th.	Mr. Weisenberger	Unsanitary privy	1211
248	J. Eschbach	714 N. 12th.	Grant Beasley	Unsanitary privy	1249
249	J. Johnson	708 N. 12th.	Oliver Coy	Unsanitary privy	1251
250	E. Johnson	706 N. 12th.	Oliver Coy	Unsanitary privy	1252
251	C. Conn	711 N. 12th St.	John Milan	Unsanitary privy	1256
252	Tom Chambers	817 N. 7th St.	Mr. Milburn	Unsanitary privy	1282
253	H. C. Norris	813 N. 7th St.	Mr. Milburn	Unsanitary privy	1283
254	P. L. Wilks	828 N. 8th St.	Mr. Kennedy	Unsanitary privy	1290
255	Mr. Bevelheimer	823 N. 10th.	Mr. Kuhlmeier	Unsanitary privy	1292
256	S. L. Wilson	812 N. 10th.	Joe Swarts	Unsanitary privy	1309
257	C. Aubrey	816 N. 10th.	J. W. Whitmeyer	Unsanitary privy	1310
258	P. F. Kenney	822 N. 10th.	Mrs. M. Recker	Unsanitary privy	1312
259	E. Lloyd	817 N. 10th.	Baker, Shoals, Ind.	Unsanitary privy	1316
260	T. Pickering	818 Upper 11.	T. Pickering	Unsanitary privy	1330
261	W. Harris	812 Upper 11.	J. Shoemaker	Unsanitary privy	1331
262	R. A. Adamson	803 Upper 11.	Mr. Mortar	Unsanitary privy	1335
263	M. V. Smithem	1162 Scott	Mr. Mortar	Unsanitary privy	1336
264	A. J. Harvey	818 N. 12th.	Mr. Worley	Unsanitary privy	1342
265	J. Traylor	802 N. 12th.	Miss Sager	Unsanitary privy	1345
266	H. Hulen	805 N. 12th.	C. Hemky	Unsanitary privy	1347
267	T. Hargis	803 N. 12th.	C. Hemky	Unsanitary privy	1346
268	H. Lankford	914 N. 9th.	Mrs. J. Hearsey	Unsanitary privy	1391
269	Mrs. Bernstein	1005 N. 9th St.	Mrs. Turner	Unsanitary privy	1400
270	John Hunkler	1003 N. 9th.	Mrs. Turner	Unsanitary privy	1399
271	D. Reeves	1023 N. 9th.	Mr. Beasley	Unsanitary privy	1402
272	C. Martin	1031 N. 9th.	Mrs. McCormick	Unsanitary privy	1405
273	J. Stewart	1036 N. 10th.	Mr. DeBruler	Unsanitary privy	1409
274	C. E. Moore	1018 N. 10th.	Mrs. Meyers	Unsanitary privy	1413
275	Mrs. A. Duncan	1023 N. 10th.	Miss Kirk	Unsanitary privy	1425
276	E. Edelman	1007 N. 11th.	Mr. Yokum	Unsanitary privy	1450
277	J. Green	903 Upper 11.	Mr. Fremder	Unsanitary privy	1462
278	H. Schrader	1007 Upper 11.	S. Kline	Unsanitary privy	1467
279	J. M. Monroe	1014 N. 12.	Mr. Glas	Unsanitary privy	1473
280	F. Sparsberg	920 N. 12.	J. Swarts	Unsanitary privy	1479
281	L. Jordan	915 N. 12.	Elisabeth Falls	Unsanitary privy	1487
282	Mrs. O'Leary	921 N. 12th.	Elisabeth Falls	Unsanitary privy	1488
283	John Kahrie	1003 N. 12th.	Mr. Manning	Unsanitary privy	1490
284	Mrs. O. McGough	1073 N. 12.	Mr. Stear	Unsanitary privy	1493
285	Francis Ross	1015 N. 12th.	Mr. Stear	Unsanitary privy	1494
286	H. Jones	1024 N. 13th.	Mr. Kurts	Unsanitary privy	1500
287	Mrs. H. Courtney	1014 N. 13th.	Mr. Fort	Unsanitary privy	1501
288	C. A. Sellers	1228 Hickman	B. F. Wheeler	Unsanitary privy	1503
289	S. Eoff	916 N. 13th.	Mrs. L. Willis	Unsanitary privy	1506
290	G. W. Ferguson	910 N. 13th.	Mr. Messel	Unsanitary privy	1507
291	S. T. Goodman	1005 N. 13th.	John Davis	Unsanitary privy	1510
292	D. Burrese	1024 N. 14th.	J. Adams	Unsanitary privy	1516
293	C. Curry	1022 N. 14th.	Mr. Mortar	Unsanitary privy	1517
294	H. Corrie	1610 N. 14th.	G. McAndrews	Unsanitary privy	1520
295	H. O. Winger	1003 N. 14th.	Mr. Schrader	Unsanitary privy	1523
296	B. Gowins	1017 N. 14th.	Mr. Schrader	Unsanitary privy	1525
297	Mr. Brannum	1027 N. 14th.	Mr. Pennington	Unsanitary privy	1529

TABLE No. 5—Continued.

Report Number.	Resident.	Address.	Property Owner.	Complaint.	Sample Number.
298	W. C. Smith	1237 N. 11th	Sam White	Unsanitary privy	1534
299	E. Ridgeby	1232 Upper 11.	Mr. Montgomery	Unsanitary privy	1537
300	T. Goodsel	1208 Upper 11.	Mr. Montgomery	Unsanitary privy	1538
301	O. Springer	1126 Wabash	Mr. Mortar	Unsanitary privy	1539
302	J. D. Wonderly	1219 N. 11th	Charles Hoten	Unsanitary privy	1542
303	J. W. Evans	1223 N. 11th	Mr. Shick	Unsanitary privy	1544
304	Dr. McCormick	1511 N. 11th	Mr. Debruler	Unsanitary privy	1549
305	H. Learmonth	1631 N. 11th	Mr. Debruler	Unsanitary privy	1550
314	L. Hamilton	1624 N. 12th	Mr. Borden	Unsanitary privy	1563
315	Wm. Blakely	1205 N. 12th	Mr. Johnson	Unsanitary privy	1569
316	J. A. Johnson	1224 McKinley	J. McCormick	Unsanitary privy	
317	J. Mullin	1717 Upper 11.	Mr. Meyers	Unsanitary privy	
318	J. Maroney	1164 McKinley	Mr. Vandermark	Unsanitary privy	1597
319	Emma Sturgeon	116 McKinley	Mr. Vandermark	Unsanitary privy	1598
320	W. C. Phillips	1172 McKinley	Mrs. Sarah Guese	Unsanitary privy	1599
321	F. Jordan	1109 Tewalt	Dr. Held	Unsanitary privy	1602
322	Mrs. C. Nash	1202 Tewalt	Mr. Ruble	Unsanitary privy	1615
323	G. Smith	1158 Tewalt	Mr. Folks	Unsanitary privy	1616
324	H. Mahan	1152 Tewalt	Mr. Miligan	Unsanitary privy	1617
325	E. Turymen	1151 Ridgeway	W. H. Moore	Unsanitary privy	1618
326	F. Murphy	1161 Ridgeway	Mr. McClure	Unsanitary privy	1620
327	J. Fitzgerald	1203 Ridgeway	Mr. Sater	Unsanitary privy	1621
328	J. Burton	1211 Ridgeway	S. Wilson	Unsanitary privy	1622
329	M. S. Wilks	1331 Ridgeway	Dr. A. B. Priest	Unsanitary privy	1625
330	Roy Williams	1212 Ridgeway	Mr. Vandermark	Unsanitary privy	1628
331	Wm. L. Fields	809 Emison	Mr. Meyers	Unsanitary privy	1642
332	M. B. Hedrick	813 Emison	Mr. Borden	Unsanitary privy	1643
333	A. R. Parker	823 Emison	Mr. Clemcier	Unsanitary privy	1644
334	W. T. Dailey	825 Emison	Mr. Borden	Unsanitary privy	1646
335	Vacant	827 Emison	Mr. Borden	Unsanitary privy	1646
336	Mr. Powell	831 Emison	Mr. Borden	Unsanitary privy	1647
337	J. D. Malone	833 Emison	Mr. Vaughn	Unsanitary privy	1648
338	E. E. Keefer	835 Emison	Mr. Borden	Unsanitary privy	1649
339	Vacant	857 Emison	Mr. Borden	Unsanitary privy	1650
340	J. F. Quartman	912 Emison	Mr. Buckles	Unsanitary privy	1652
341	S. M. Huffman	854 Emison	Mr. Meyers	Unsanitary privy	1657
342	C. Huffman	836 Emison	Mr. Clemcier	Unsanitary privy	1658
343	E. Adams	834 Emison	Mr. Lott	Unsanitary privy	1659
344	Mrs. J. Hobbe	832 Emison	Mr. Lott	Unsanitary privy	1660
345	R. Smith	830 Emison	Mr. Curtis	Unsanitary privy	1661
346	C. Salts	826 Emison	J. Murphy	Unsanitary privy	1662
347	Mrs. Beard	822 Emison	A. Shury	Unsanitary privy	1663
348	J. Painter	810 Emison	J. Painter	Unsanitary privy	1664
349	C. Painter	806 Emison	Mr. Hamke	Unsanitary privy	1666
350	J. Bennett	1309 Ritterskamp	Mr. McCormick	Unsanitary privy	1671
351	E. Elris	1306 Ritterskamp	Dr. Hammond	Unsanitary privy	1674
352	J. D. Harbin	1206 Ritterskamp	Mr. Nansett	Unsanitary privy	1678
353	Mrs. Senema	2103 Fairground	Mr. Jackson	Unsanitary privy	1679
354	Paul Curtner	1317 Fairground	Mr. McClure	Unsanitary privy	1686
355	E. C. Williams	1721 Fairground	Victor Manning	Unsanitary privy	1695
356	Ann Roberts	1110 DeWolf	W. F. Farrell	Unsanitary privy	1699
357	W. Law	913 Elm	P. G. Ryan	Unsanitary privy	1703
358	R. M. Stafford	1001 Locust	Mr. Smith Decker, Ind.	Unsanitary privy	1717
359	W. Lyons	1015 Locust	John Vankirk	Unsanitary privy	1720
360	C. G. Purvis	1011 Oak St.	Mrs. Wells	Unsanitary privy	1727
361	J. Mills	1220 N. 10th	J. Roderick	Unsanitary privy	1736
362	J. M. Todd	1215 N. 9th	Mr. Gonnell	Unsanitary privy	1744
363	H. S. Joyce	1216 N. 9th	C. C. Gonnell	Unsanitary privy	1747
364	Mrs. Patterson	1676 Fairground	Mrs. Patterson	Unsanitary privy	1754
365	C. Highfield	1621 Indiana	Fred Brook	Unsanitary privy	1764
366	J. L. Cowell	1651 Indiana	Mr. DeBruler	Unsanitary privy	1765
367	Bert Draine	1715 Indiana	L. Meyers	Unsanitary privy	1771
368	W. Wiseman	1721 Indiana	Ed. Watson	Unsanitary privy	1772
369	R. L. Reinhold	1813 Indiana	Mr. Buckles	Unsanitary privy	1774
370	S. Austin	1777 Indiana	Mr. Cutter	Unsanitary privy	1777
371	S. Davis	1778 Indiana	C. E. Everett	Unsanitary privy	1778
372	A. Parr	1785 Indiana	Mr. Borden	Unsanitary privy	1785
373	Mrs. Meyers	1866 Indiana	Dr. Jones	Unsanitary privy	1789
374	A. White	1652 Indiana	H. Adams	Unsanitary privy	1792
375	A. G. Tarr	609 N. 1st	Mr. Parcell	Unsanitary privy	1800
376	S. Lance	17 Hart St.	Dr. Tade	Unsanitary privy	1801
377	Emma Berman	29 W. Hart	Dr. Tade	Unsanitary privy	1802
378	N. Malitky	514 N. 1st	Mr. Huffman	Unsanitary privy	1803
379	H. Baldwin	515 N. 1st	Jane Emerson	Unsanitary privy	1808
380	J. Budlow	509 N. 1st	Jane Emerson	Unsanitary privy	1809

TABLE No. 5—Continued.

Report Number.	Resident.	Address.	Property Owner.	Complaint.	Sample Number.
381	W. E. Fields	112 Seminary	Mr. Eaton	Unsanitary privy	1814
382	Geo. Malloney	112 Buntin	Mr. Jackson	Unsanitary privy	1821
383	A. Anderson	309 N. 1st	John Bierhaus	Unsanitary privy	1822
384	H. Harmon	119 Buntin	Mr. Graves	Unsanitary privy	1823
385	M. McClure	19 S. 2nd	Mr. Cuppes	Unsanitary privy	1830
386	Mary Braydon	103 S. 2nd	Catholic Congregation	Unsanitary privy	1832
387	Mr. Griffith	105 S. 2nd	Catholic Congregation	Unsanitary privy	1833
388	Minnie Ledgerwood	617 N. 2nd	L. B. Smith	Unsanitary privy	1842
389	Mr. Brocksmith	619 N. 2nd	L. B. Smith	Unsanitary privy	1843
390	R. C. Guiler	212 Perry	Mrs. Seitel	Unsanitary privy	1849
391	J. B. McClure	328 N. 3rd	J. B. LaPlante	Unsanitary privy	1850
392	T. Goodare	114 N. 3rd	J. B. LaPlante	Unsanitary privy	1854
393	J. Evans	120 N. 3rd	J. Bevort	Unsanitary privy	1855
394	B. B. Davis	138 N. 3rd	J. B. LaPlante	Unsanitary privy	1858
395	Mrs. Wilman	210 N. 4th	Mr. Grader	Unsanitary privy	1873
396	C. W. Grader	104 N. 4th	G. W. Grader	Unsanitary privy	1872
397	T. K. Willis	216 N. 5th	Will Helbard	Unsanitary privy	1897
398	Art Store	514 Main	Mr. Eberwine	Unsanitary privy	1915
399	W. French	407 N. 6th	Joe Kimmell	Unsanitary privy	1927
400	J. Southerland	621 Dubois	Mr. Brant	Unsanitary privy	1956
401	H. Becker	409 S. 7th	Mr. Brant	Unsanitary privy	1957
402	B. Fowler	1105 6th	Mr. Duesterberg	Unsanitary privy	1962
403	P. Aubrey	621 Church		Unsanitary privy	1955
404	J. Elkins	2205 6th	Mr. Jaepfel	Unsanitary privy	1970
405	Mrs. C. Boyer	619 Nicholas	M. K. Thomas	Unsanitary privy	1982
406	R. Herschelmann	624 Bayou	Miss Mimundy	Unsanitary privy	1989
407	J. Kan	618 S. 6th	Miss McClure	Unsanitary privy	1991
408	H. R. Graham	421 S. 2nd	Lawyer Weems	Unsanitary privy	2005
409	M. Lynch	511 S. 2nd	Mr. Eagles	Unsanitary privy	2009
410	Q. Sturgeon	526 S. 2nd	Mr. Foulks	Unsanitary privy	2012
411	A. Lee	518 S. 2nd	Mr. Cooley	Unsanitary privy	2013
412	Ed. Dillinger	208 Nicholas	Mr. Becker	Unsanitary privy	2015
413	Mrs. Tewalt	202 Dubois	G. Schmidt	Unsanitary privy	2018
414	Ed. Morton	529 S. 3rd	Mr. Whitney	Unsanitary privy	2029
415	S. J. Hall	524 S. 3rd	Wm. Montgomery	Unsanitary privy	2032
416	John Clinton	315 Bayou	Raymond Clinton	Unsanitary privy	2065
417	J. N. Neighbors	407 Bayou	Building and Loan	Unsanitary privy	2067
418	George Nash	S. 4th St.	George Nash	Unsanitary privy	2071
419	Mrs. O'Donnell	409 S. 5th	Mrs. O'Donnell	Unsanitary privy	2090
420		24 S. 5th		Unsanitary privy	
421		28 S. 5th		Unsanitary privy	
422	T. I. Bailey	102 S. 5th	T. I. Bailey	Unsanitary privy	2162
423	Mrs. Vatchett	506 Church	T. I. Bailey	Unsanitary privy	2164
424	Thos. Dubois	117 S. 6th	Frank Halter	Unsanitary privy	2170
425	J. J. Robbins	403 N. 7th	J. J. Robbins	Unsanitary privy	2182
426	Grace Thurgood	23 S. 6th	Estate of Thurgood	Unsanitary privy	2172
427	C. W. Lansbury	Seminary and 7th	Lucinda Clark	Unsanitary privy	2185
428	Bender's Bakery	323 N. 7th	John Shoultr	Unsanitary privy	2188
429	E. Whitaker	618 N. 8th	E. Whitaker	Unsanitary privy	2192
430	J. H. Shulser	604 N. 8th	J. H. Schuler	Unsanitary privy	2195
431	Tracy Landers	226 S. 5th	Tracy Landers	Unsanitary privy	2125
432	Jules Marshall	611 S. 6th	Mrs. Goosen	Unsanitary privy	2137
433	Mr. Price	319 Dubois	Mr. Foulkes	Unsanitary privy	2157
434		615 S. 6th		Unsanitary privy	
435	Green Bennington	514 N. 8th	Amanda Mathasia	Unsanitary privy	2197
436		611 N. 7th		Unsanitary privy	
437		621 N. 7th		Unsanitary privy	
438	F. W. Woods	737 Perry	Dr. De Priest	Unsanitary privy	2203
439	J. S. Fritchett	811 Broadway	Jas. Pritchett	Unsanitary privy	2209
440	Chas. Bailey	812 Busserson	P. R. McCarty	Unsanitary privy	2213
441	Mrs. J. Thompson	725 Main	Mrs. J. Thompson	Unsanitary privy	2219
442	John Hartje	816 Buntin	John Hartje	Unsanitary privy	2228
443	E. P. Johnson	814 Buntin		Unsanitary privy	
444	S. Meise	800 Seminary	S. Meise	Unsanitary privy	2233
445	Robert Johnson	603 N. 8th	Earl Buck	Unsanitary privy	2238
446	H. N. Carter	823 Hart	Fred Volmer	Unsanitary privy	2246
447	L. J. Weiniger	820 Seminary	L. A. Meyers	Unsanitary privy	2247
448	A. C. Thorne	832 Seminary	E. A. Ritterskamp	Unsanitary privy	2248
449	Mrs. W. O. Coyle	816 Seminary	E. A. Ritterskamp	Unsanitary privy	2250
450	Mrs. J. Curtis	910 Busserson	Mrs. J. Curtis	Unsanitary privy	2262
451	Harry Shasere	920 Main	Harry Shasere	Unsanitary privy	2266
452	George Brown	923 Buntin	Mrs. G. Weems	Unsanitary privy	2275
453		914 Buntin		Unsanitary privy	2278
454	Jennie Catlett	908 Perry	Mrs. Gertie White	Unsanitary privy	2280
455	W. M. Simpson	904 Seminary	W. M. Thompson	Unsanitary privy	2281
456	Mary Wooley	914 Seminary	Mary Wooley	Unsanitary privy	2283

TABLE No. 5—Continued.

Report Number.	Resident.	Address.	Property Owner.	Complaint.	Sample Number.
457	Mary Cassidy	413 N. 9th.	Mary Cassidy	Unsanitary privy	2284
458	H. F. Hollowel	922 Perry	Mr. L. H. Volmer	Unsanitary privy	2285
459	R. M. Kite	929 Perry	Fred Busse	Unsanitary privy	2287
460	Frank Harrod	312 N. 10th.	Mrs. M. A. O'Donnel	Unsanitary privy	2288
461	John Hans.	308 N. 10th.	John Hans.	Unsanitary privy	2289
462	Parsonage A.M.E. Church	215 N. 10th.		Unsanitary privy	2291
463	T. L. Louis	1002 Broadway	Mrs. Mary Lonsky	Unsanitary privy	2292
464	Henry Dubois	1010 Bussoron	Henry Dubois	Unsanitary privy	2297
465	Carrie Ossendorf	10th and Bussoron	Carrie Ossendorf	Unsanitary privy	2299
466	Anna Hirsch	1004 Main		Unsanitary privy	2300
467	George Kahl	1020 Main	Mr. Hellert	Unsanitary privy	2302
468	Ulysses Foreman	1025 Bussoron	Building and Loan	Unsanitary privy	2303
469	Minnie Kerner	1014 Bussoron	Minnie Kerner	Unsanitary privy	2306
470	J. A. Williams	1018 Bussoron	L. A. Meyers	Unsanitary privy	2307
471	Joe Hullen	1026 Bussoron	Mr. Crawley	Unsanitary privy	2308
472	Mrs. Nelson	1021 Buntin	Ed. Watson	Unsanitary privy	2312
473	Alice Cox	1027 Buntin	Alice Cox	Unsanitary privy	2313
474	S. M. Newcomb	1020 Buntin	L. H. Volmer	Unsanitary privy	2315
475	Mr. Bender	1018 Buntin	L. H. Volmer	Unsanitary privy	2316
476	Bradley Riley	317 N. 10th.	Bradley Riley	Unsanitary privy	2319
477	W. A. Brown	1018 Perry	Ernest Volmer	Unsanitary privy	2325
478	J. C. Brodie	1024 Perry	Mrs. Julian	Unsanitary privy	2376
479	L. B. Wininger	1003 Seminary	E. A. Ritterskamp	Unsanitary privy	2328
480	Mrs. Julia Steffin	913 Hart	Mrs. Julia Steffin	Unsanitary privy	2337
481	Rhodie Lee	1023 Hart	Rhodie Lee	Unsanitary privy	2347
482	Chas. Mallory	1030 Hart	Mrs. Hettie White	Unsanitary privy	2348
483	Ed. Beierdorfer	32 S. 7th	Mr. Adams	Unsanitary privy	2362
484	Louise Beckman	709 Vigo	Louis Beckman	Unsanitary privy	2363
485	Ed. Gardner	703 Vigo	Ed. Gardner	Unsanitary privy	2364
486	Anton Frolky	711 Church	Mr. Klenschhouse	Unsanitary privy	2367
487	Wm. Recker	703 Nicholas	Wm. Recker	Unsanitary privy	2370
488	Elizabeth Mortar	720 Prairie	Elizabeth Mortar	Unsanitary privy	2388
489	Harry McCarty	615 S. 8th	Joseph Halter	Unsanitary privy	2390
490	George Johnson	519 S. 7th	Joseph Halter	Unsanitary privy	2399
491	Tony Halter	515 S. 8th	Tony Halter	Unsanitary privy	2400
492	Will King	715 Vigo	Squire Becker	Unsanitary privy	2404
493	A. D. Faught	721 Vigo	Squire Becker	Unsanitary privy	2405
494	Mrs. Mary Spaulding	807 Dubois	Mrs. Mary Spaulding	Unsanitary privy	2417
495	Wm. Vatchett	410 S. 8th	Grayson & Vander- martin	Unsanitary privy	2418
496	Theresa Muckenstrom	418 S. 8th	Theresa Muckenstrom	Unsanitary privy	2419
497	Chas. Bouchie	807 Nicholas	Mrs. Julia Vatchett	Unsanitary privy	2421
498	Catherine Kuhn	514 S. 8th	Catherine Kuhn	Unsanitary privy	2425
499	J. E. Powers	822 Willow	Building and Loan	Unsanitary privy	2438
500	Elisa Burnworth	821 Dubois	A. E. Becker	Unsanitary privy	2451
501	L. L. Couch	827 Dubois	A. E. Becker	Unsanitary privy	2452
502	Aloys Bohnert	817 Bayou	Tohn Bohnert	Unsanitary privy	2457
503	Mike Kroeger	811 Prairie	Mike Kroeger	Unsanitary privy	2465
504	Felix Gremore	740 S. 9th	Felix Gremore	Unsanitary privy	2468
505	Anton Kappe	730 S. 9th	Anton Kappe	Unsanitary privy	2470
506	Jesse Hanover	901 Prairie	Mrs. Emma Moses	Unsanitary privy	2472
507	Mrs. Emma Moses	907 Prairie	Mrs. Emma Moses	Unsanitary privy	2473
508	Ernest R. Mayer	632 S. 9th	Mrs. Catherine Shaffer	Unsanitary privy	2475
509	Fred Kurts	618 S. 9th	A. Tretty	Unsanitary privy	2477
510	G. Bergman	528 S. 9th St.	G. Bergman	Unsanitary privy	2479
511	Louis Hamm	510 S. 9th	John Ruple	Unsanitary privy	2480
512	Mrs. P. Leggett	223 S. 9th	Mrs. John Frolky	Unsanitary privy	2486
513	Isador Devonet	402 S. 9th	F. Stalkamp	Unsanitary privy	2491
514	Frank Linnick	921 Nicholas	August Shaffer	Unsanitary privy	2495
515	John Thais	617 S. 10th	John Thais	Unsanitary privy	2500
516	G. M. Dattilo	405 S. 10th	G. M. Dattilo	Unsanitary privy	2515
517	Chas. Dattilo	918 Dubois	Chas. Dattilo	Unsanitary privy	2516
518	Louis Thompson	929 Barnett.	Louis Thompson	Unsanitary privy	2518
519	Marion Porter	1033 Vigo	Mayn House	Unsanitary privy	2537
520	Mary Bultman	1028 Nicholas	Mary Bultman	Unsanitary privy	2561
521	John Gerhke	1017 Nicholas	John Gerhke	Unsanitary privy	2562
522	Wm. Fields	336 S. 12th St.	Mr. Borden	Unsanitary privy	2567
523	Jas. Finn	1204 Barnett.	Jas. Finn	Unsanitary privy	2591
524	Joe Eads	118 S. 12th	Joe Burnett	Unsanitary privy	2601
525	Ed. Harrison	1221 Vigo	Geo. Milligan	Unsanitary privy	2604
526	Jess McDonald	337 S. 13th	Hamil Hinkle	Unsanitary privy	2618
527	Wm. Richards	333 S. 13th	Hamil Hinkle	Unsanitary privy	2619
528	John Taylor	305 S. 13th	Mr. Borden	Unsanitary privy	2621
529	Francis Lay	321 S. 13th	Mr. Borden	Unsanitary privy	2622
530	Fred Thompson	1120 Main	Ed. Oxman	Unsanitary privy	2634
531	Ot. McGuire	1105 Main	Ida Kellems	Unsanitary privy	2636

TABLE No. 5—Continued.

Report Number.	Resident.	Address.	Property Owner.	Complaint.	Sample Number.
532	Herb O. Sharr	Main and 11th		Unsanitary privy	2637
533	Sam Smith	1122 Busseron		Unsanitary privy	2644
534	F. B. Gillespie	1142 Broadway	D. H. Lane	Unsanitary privy	2655
535	Fred Osterhage	1137 Buntin	Judge Cobb	Unsanitary privy	2660
536	Chas. Underfaith	1141 Buntin	Chas. Underfaith	Unsanitary privy	2661
537	W. W. Loyd	1119 Perry	Chas. Dreiman	Unsanitary privy	2670
538	Bakery	1124 Main	Ed. Oxman	Unsanitary privy	
539	F. Mitchell	1114 Seminary	Wm. Alsop	Unsanitary privy	2689
540	Frank Johnson	1103 Hart	Frank Johnson	Hogs on premises	2690
541	Louisa Moe	1107 Hart	Grayson & Vander- martin	Unsanitary privy	2691
542	Phillip Cullison	617 Upper 11th	Phillip Cullison	Unsanitary privy	2697
543	J. H. Meyers	620 N. 12th	Anton Burre	Unsanitary privy	2698
544	E. F. Glase	616 N. 12th	E. F. Glase	Unsanitary privy	2699
545	M. J. Dreiman	605 N. 12th	M. J. Dreiman	Unsanitary privy	2701
546	L. T. Barekman	613 N. 12th	Dr. Geo. Alsop	Unsanitary privy	2702
547	W. M. McCoy	617 N. 12th	Wm. Summitt	Unsanitary privy	2703
548	Wm. Blunk	621 N. 12th	W. D. Brown	Unsanitary privy	2704
549	J. H. Powell	1233 Main	Chas. Borden	Unsanitary privy	2713
550	Ansel Brandenburg	1255 Busseron	Ansel Brandenburg	Unsanitary privy	2714
551	Jasper Moore	1231 Busseron	Jasper Moore	Unsanitary privy	2715
552	Ed. Fries	1212 Busseron	Ed. Fries	Unsanitary privy	2717
553	Mike Schwab	1233 Busseron	Mike Schwab	Unsanitary privy	2719
554	H. J. Boyer	1235 Broadway	J. S. Adams	Unsanitary privy	2725
555	C. F. Schultz	1223 Buntin	C. F. Schultz	Unsanitary privy	2729
556	Vernon McCormick	1215 Buntin	John Presnall	Unsanitary privy	2731
557	Alvin Younghaus	1211 Buntin	Alvin Younghaus	Unsanitary privy	2732
558	Mrs. Mae Jones	1202 Buntin	Mrs. Huffman	Unsanitary privy	2734
559	Roy Lanahan	1211 Broadway	Roy Lanahan	Unsanitary privy	
560	Ed. Joiner	1225 Perry	Bell Jordan	Unsanitary privy	2745
561	Geo. Goens	1240 Perry	Building and Loan	Unsanitary privy	2746
562	T. L. Chapman	1225 Seminary	Jas. Brown	Unsanitary privy	2759
563	Kitty Laws	1226 Seminary	Kitty Laws	Unsanitary privy	2763
564	Hiram Stewart	1220 Seminary	Hiram Stewart	Unsanitary privy	2764
565	L. A. Presnall	621 N. 14th	Herman Schrader	Unsanitary privy	2775
566	Mrs. Naomi Cox	1332 Busseron	Mrs. Naomi Cox	Unsanitary privy	2821
567	Mr. Dutton	1412 Busseron	Earl Beale	Unsanitary privy	2826
568	W. C. Williams	1428 Busseron	J. C. Wise	Unsanitary privy	2831
569	Hannah Bouchie	1436 Main	D. T. Hale	Unsanitary privy	2846
570	A. M. Urdike	1414 Main	Grayson & Vander- martin	Unsanitary privy	2849
571	K. T. Simpson	1317 Main	K. T. Simpson	Unsanitary privy	2857
572	Roscoe Swan	1335 Main	John Durham	Unsanitary privy	2858
573	Louis Frederick	121 S. 14th	L. A. Meyers	Unsanitary privy	2873
574	John Memering	1326 Church	Fred Winman	Unsanitary privy	2875
575	John Flack	1319 Church	John Flack	Unsanitary privy	2879
576	D. H. Padgett	1317 Busseron	Grayson & Vander- martin	Unsanitary privy	
577	Fred Winman	118 S. 13th	Fred Winman	Unsanitary privy	2887
578	G. W. Robinson	1321 Barnett	George Shields	Unsanitary privy	2892
579		1323 Barnett	George Shields	Unsanitary privy	
580	John Allen	427 S. 15th	Simpson Lumber Co.	Unsanitary privy	2898
581	John Olden	425 S. 15th	Simpson Lumber Co.	Unsanitary privy	2899
582	Tom Nash	1409 Nicholas	Grayson & Vander- martin	Unsanitary privy	2901
583	Mrs. Maude Connors	320 S. 13th	Herman Boltman	Unsanitary privy	2907
584	Mrs. Mary Strautman	316 S. 13th	Mrs. Mary Strautman	Unsanitary privy	2908
585	Peter Bouvy	1325 Bayou	Peter Bouvy	Unsanitary privy	2917
586	Thomas Decker	1420 Bayou	Grayson & Vander- martin	Unsanitary privy	2922
587	Ora Cooper	1527 Bayou	Ora Cooper	Unsanitary privy	2927
588	John Farley	1610 Prairie	Mr. Hall	Unsanitary privy	2930
589	Geo. W. Young	1330 Prairie	Building and Loan	Unsanitary privy	2947
590	Fred Steimels	1327 Prairie	Clara Brokhage	Unsanitary privy	2953
591	John Ray	1335 Prairie	I. G. Worley	Unsanitary privy	2955
592	M. Kelley	1402 Parkison	G. Gwinn	Unsanitary privy	2963
593	Chas. Bono	1410 Parkison		Unsanitary privy	2965
594	John Lane	1417 Parkison	Mr. Rumer	Unsanitary privy	2966
595	Harry Fields	Building and Loan		Unsanitary privy	2968
596	Ben Lamping	1403 Parkison	Building and Loan	Unsanitary privy	2970
597	Harvey Guess	1404 Wheeler	Harvey Guess	Unsanitary privy	2972
598	W. R. Holcomb	1414 Wheeler	W. R. Holcomb	Unsanitary privy	2973
599	Jas. Miller	1441 Wheeler	Joe Hershey	Unsanitary privy	2975
600	Marion Adkins	828 S. 15th	G. W. Wiseman	Unsanitary privy	2976
601	Peter Cannon	1517 Wheeler	Peter Cannon	Unsanitary privy	2978
602	Mrs. E. Bronson	1614 Wheeler	Mrs. Elizabeth Bronson	Unsanitary privy	2979

TABLE No. 5—Continued.

Report Number.	Resident.	Address.	Property Owner.	Complaint.	Sample Number.
603	J. N. Goodman .....	1030 S. 17th .....	Mr. Borden .....	Unsanitary privy ..	2981
604	Thos. Mahoney .....	17th and Laplante ..	Alex. Runyon .....	Unsanitary privy ..	2988
605	Chas. Richardville .....	1536 Mentor .....	Chas. Richardville ..	Unsanitary privy ..	2989
606	C. R. Staley .....	1532 Mentor .....	L. A. Meyers .....	Unsanitary privy ..	2990
607	John Furgeson .....	1530 Mentor .....	L. A. Meyers .....	Unsanitary privy ..	2991
608	John Willy .....	1528 Mentor .....	L. A. Meyers .....	Unsanitary privy ..	2992
609	F. J. Gugnath .....	1523 Laplante .....	Grayson & Vander- martin .....	Unsanitary privy ..	2994
610	F. M. Andrews .....	1428 Willow .....	Mr. Hunkler .....	Unsanitary privy ..	2995
611	Wm. Sheppard .....	1319 Parkison .....	Joe Zaphl .....	Unsanitary privy ..	2999

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3. Bad Wells.
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5. Storm Water Sewer.
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**REPORT**  
**OF THE**  
**DEPARTMENT OF WEIGHTS AND**  
**MEASURES,**  
**LABORATORY OF HYGIENE,**  
**FOR THE YEAR ENDING**  
**DECEMBER 1, 1914.**

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**H. E. BARNARD, PH.D.**  
State Commissioner of Weights and Measures.

**JOHN T. WILLETT,**  
Chief Inspector of Weights and Measures.





## REPORT ON WEIGHTS AND MEASURES.

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INDIANAPOLIS, December 30, 1914.

Hon. Samuel M. Ralston, Governor, State of Indiana :

My Dear Governor Ralston—I enclose herewith my third annual report as State Commissioner of Weights and Measures. In order that the volume and value of the work done during the year by the inspectors of weights and measures throughout the State may be the more clear to you, I have tabulated the results of the work both under the name of each inspector and in a complete summary.

The grand total of inspections made during the year was 88,223. The inspectors working in Indiana during the year tested 19,877 weighing machines, of which 22.2 per cent. were found to be incorrect. They tested 14,234 weights, of which 9.6 per cent. were incorrect; 28,665 capacity measures; 16,290 boxes and baskets; 4,076 counter measures and a great variety of other weighing and measuring devices. Eighty-eight prosecutions were brought during the year for violation of the Weights and Measures Law. In fifty-seven cases convictions were obtained.

The results of the year's work are but partially shown by these figures. Indeed the benefit to the consumer of weights and measures legislation is not measured so much in terms of inspections made and convictions obtained as by the influence exerted on trade conditions. It is now generally understood by merchants and consumers alike that commodities are to be sold according to law, dry commodities by dry measure, liquid commodities by liquid measure and all commodities either over the scale or under a label setting forth the exact weight or content of the commodity.

Prior to the passage of the Weights and Measures Law certain dry commodities were universally sold by liquid measure. This has been particularly the case with cranberries and with garden seeds. Since the liquid quart is one-sixth smaller than the dry quart the consumer has unconsciously paid 15 per cent. more for his purchases than he should have. It is interesting to note that the price of commodities has not been increased with the adoption of the dry measure. Under the law and specifications promulgated

therewith only dry measures which comply in diameter and depth with the specifications are sealed by local and state inspectors and the bottomless, removable, adjustable bottomed and flaring and high formed measures are now not permitted to be used.

An amendment to the Federal Food Law became effective September 3, 1914, which requires that all food stuffs sold in package form be labeled with the net weight or volume of content. The enforcement of this law is of material help in regulating the sale of all commodities in interstate trade. The Indiana statute goes further than the Federal law in that it requires all commodities to be sold by standard weight or measure. The inspectors report occasional difficulties in securing a compliance with this provision, particularly in the sale of bulk goods, such as potatoes in the sack. In general, however, manufacturers, wholesalers and retailers have been diligent in changing trade practices to meet the requirements of law.

Standards for the following cities and counties have been tested and sealed during the year: Indianapolis, Gary, Elkhart, Richmond, Lafayette, and Lake and Vermillion counties.

Gary and Mishawaka have appointed inspectors of weights and measures during the year. Lake, Vermillion and Lagrange counties have also established departments of weights and measures.

At the request of the State Department of Weights and Measures the Government test weight car of the Bureau of Standards at Washington was shipped to Indiana for the purpose of investigating the condition of railroad track scales used in the State. Forty-four scales were tested. Sixty-three per cent. of these scales operated within the tolerance established under our specifications. A number of scales were found to be very poorly constructed and badly maintained. The results of the work show the necessity for a strict supervision of railroad track scales over which the bulk of interstate business is transacted. We recommend the purchase and maintenance by the State of a suitable equipment for the testing of railroad track scales.

For the purpose of arousing a greater interest in honest weights and measures an educational exhibit assembled by the Department and showing dishonest weights and measures was exhibited in the following cities: Kokomo, Fall Festival; Indianapolis, State Fair; Bluffton, Home Coming Week; Aurora, Child's Welfare Exhibit; and Seymour, Corn and Fall Festival.

An investigation of particular interest was that instigated by several inspectors for the purpose of determining the capacity of the

wagon beds used for hauling gravel, sand, crushed rock, etc., in the construction and maintenance of roads for which quantities of road material are annually purchased and hauled to the place where it is to be used. This material is rarely weighed and in most cases the purchase price and the cost of hauling is based on the cubic yard, which is determined roughly by the number of loads delivered rather than by the actual measurement of the wagon bed. Since very many of the wagon beds which are supposed to hold a cubic yard hold less than this quantity, frequently not more than three-fourths of a cubic yard, the cost of the material and its application is materially increased. There is no reason why material for road construction and for building operations should not be as carefully measured as any other commodity. Instructions have been given to inspectors throughout the State to require accurate measurement of all wagon beds and the payment for the material hauled therein on a basis of the actual amount hauled rather than on the number of loads carried.

The work of the year shows conclusively the great value of a careful supervision of the weights and measures used in trade throughout the State. Chapter 169 of the Acts of 1905 fixes the avoirdupois weight of a bushel of certain commodities. The list of commodities enumerated is not sufficiently accurate and in some cases the weight of a bushel, as in the case of onions, is not in accord with the weight required in other States. Additional legislation is suggested in order that the list of articles may be complete and the weights of commodities more accurately established.

It is further recommended that legislation be enacted requiring the sale of commodities by weight rather than by measure. As a matter of fact dealers are generally adopting the scale as a more accurate instrument than the measure and the legislation suggested would operate without hardship to remedy conditions which in some cases at the present time are unfair both to buyer and seller.

Respectfully submitted,

H. E. BARNARD, Ph. D.,  
State Commissioner of Weights and Measures.

## SUMMARY OF TESTS MADE IN INDIANAPOLIS.

By Herman F. Adam, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	4,612		200	94		4,906
Weights inspected.....	3,524		93			3,617
Dry measures inspected.....	4,119		409			4,528
Liquid measures inspected.....	3,760		207			3,967
Milk jars inspected.....						
Automatic pumps and gauges.....	60					60
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....	1,131					1,131
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Complaints.....	214					

January 1st, 1914, the fee system was abolished.

Mr. Adam reports forty-one prosecutions, twenty-one convictions, twenty cases dismissed or pending.

## SUMMARY OF TESTS MADE IN EVANSVILLE.

By John C. Wallenmeyer, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	380		120			500
Weights inspected.....	258		44			302
Dry measures inspected.....	813		47			960
Liquid measures inspected.....	1,885		4,355			6,240
Milk jars inspected.....	380		22			402
Automatic pumps and gauges.....	10		8			18
Baskets inspected.....	33		5			38
Boxes inspected.....	192		12			204
Yard and counter measures.....	228		7			235
Gas meters inspected.....	49		7			56
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....	14		2			16
Miscellaneous inspections.....						

## SUMMARY OF TESTS MADE IN TERRE HAUTE.

By John Masselink, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	465		23	132		620
Weights inspected.....	459		43			502
Dry measures inspected.....	344		72			416
Liquid measures inspected.....	55		34			89
Milk jars inspected.....	500		1,360			1,860
Automatic pumps and gauges.....						
Baskets inspected.....						
Boxes inspected.....	370		65			435
Yard and counter measures.....						
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....	366					366

Mr. Masselink reports three prosecutions.

Two convictions for selling apples, short measure; one conviction for selling hay, short weight.

## SUMMARY OF TESTS MADE IN FT. WAYNE.

By C. B. Tolan, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	1,290			36		1,326
Weights inspected.....	742			4		746
Dry measures inspected.....	1,388		27			1,395
Liquid measures inspected.....	530					530
Milk jars inspected.....	128					128
Automatic pumps inspected.....						
Boxes and baskets inspected.....						
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....	5					5
Counter measures.....	268					268

Mr. Tolan reports four prosecutions and four convictions. In three cases the defendant was found guilty and fined \$10.00 and costs. In one case a fine of \$5.00 and costs was assessed.

## SUMMARY OF TESTS MADE IN TERRE HAUTE.

By Byron B. Miller, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	751	176	45	155		1,127
Weights inspected.....	924	124				1,048
Dry measures inspected.....	431		235			666
Liquid measures inspected.....	3		5			8
Milk jars inspected.....	3					3
Automatic pumps and gauges.....	3	2		1		6
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....	105					105
Gas meters inspected.....	23		Fast 4	Slow 5		32
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspected.....						

Mr. Miller reports six prosecutions; two convictions for selling hay, short weight, each were fined \$50.00 and costs; three other convictions, each \$10.00 and costs, one dismissed.

## SUMMARY OF TESTS MADE IN MARION.

By Otis Weesner, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	1,230			63		1,293
Weights inspected.....	796			46		832
Dry measures inspected.....	242			32		274
Liquid measures inspected.....	268			16		284
Milk jars inspected.....						
Automatic pumps and gauges.....	309			4		311
Baskets inspected.....						
Boxes inspected.....			4,000			4,000
Yard and counter measures.....						
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						

Mr. Weesner reports three prosecutions, one conviction, fine (\$10.00 and costs \$20.00), one dismissal because prosecuting witness did not appear. One case still pending.

## SUMMARY OF TESTS MADE IN LAFAYETTE.

By Frank Fowler, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	477		37	148		662
Weights inspected.....						
Dry measures inspected.....	470		172			642
Liquid measures inspected.....	212		198			370
Milk jars inspected.....						
Automatic pumps and gauges.....						
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....	108					108
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						

Mr. Fowler reports one prosecution and one conviction.

## SUMMARY OF TESTS MADE IN RICHMOND.

By George A. McKinley, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	589	153	39	152		903
Weights inspected.....						
Dry measures inspected.....	504		93			597
Liquid measures inspected.....	396		68			464
Milk jars inspected.....						
Automatic pumps and gauges.....	54	42	2			98
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....	148		5			153
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....						

Mr. McKinley reports four prosecutions, three convictions and one dismissal.

## SUMMARY OF TESTS MADE IN GARY.

By Clarence M. Renollett, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	103	13	33	108		257
Weights inspected.....	171	51	25	26		273
Dry measures inspected.....	2		115			117
Liquid measures inspected.....			84			84
Milk jars.....						
Automatic pumps and gauges.....				2		2
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....			73			73
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						

## SUMMARY OF TESTS MADE IN KOKOMO.

By Charles A. Williams, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	973		95	96		1,164
Weights inspected.....						
Dry measures inspected.....	205		30			235
Liquid measures inspected.....	952		16			968
Milk jars inspected.....	233		15			248
Automatic pumps and gauges.....	155			5		160
Baskets inspected.....	20					20
Boxes inspected.....	319					319
Yard and counter measures.....	87		70			157
Gas meters inspected.....	5		4			9
Electric meters inspected.....	10		Fast 7	Slow 7		24
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....						

Mr. Williams reports eight prosecutions, five convictions, one continued indefinite and two cases pending.

## SUMMARY OF TESTS MADE IN ELKHART.

By B. Frank Bressler, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	198	64	10			272
Weights inspected.....	24	10	3			37
Dry measures inspected.....	18		38			56
Liquid measures inspected.....						
Milk jars inspected.....						
Automatic pumps and gauges.....						
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....	24					24
Gas meters inspected.....	5					5
Electric meters inspected.....						
Water meters inspected.....	21	Slow 2	Fast 1			24
Glass graduates.....						
Miscellaneous inspections.....						

Mr. Bressler reports two prosecutions, one conviction and one dismissal.

## SUMMARY OF TESTS MADE IN HAMMOND.

By Frank J. O'Rourke, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	282		95	18		375
Weights inspected.....		28	16			44
Dry measures inspected.....	60					60
Liquid measures inspected.....	30					30
Milk jars inspected.....						
Automatic pumps and gauges.....						
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....						
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....						

Mr. O'Rourke reports four prosecutions, two convictions and two dismissals.



## SUMMARY OF TESTS MADE IN COLUMBUS.

By G. Ora McClain, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	549	19	29	39		636
Weights inspected.....	1,157	21	44			1,222
Dry measures inspected.....	446		52			498
Liquid measures inspected.....	497		21			518
Milk jars inspected.....	124		5			129
Automatic pumps and gauges.....	50		1			51
Baskets inspected.....	903					903
Boxes inspected.....	14					14
Yard and counter measures.....	19		32			51
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....	196					196

## SUMMARY OF TESTS MADE IN MISHAWAKA.

By H. E. Strubbe, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	111	48	17	26		202
Weights inspected.....	213	78	1			292
Dry measures inspected.....	136		82			218
Liquid measures inspected.....						
Milk jars inspected.....						
Automatic pumps and gauges.....	10	14	2			26
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....						
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						

## SUMMARY OF TESTS MADE IN LAKE COUNTY.

By J. A. Umpleby, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	216	26	34	114		390
Weights inspected.....	318	50	16	48		432
Dry measures inspected.....	8		59			67
Liquid measures inspected.....	38		48			86
Milk jars inspected.....	1		1			2
Automatic pumps and gauges.....	31	20			6	57
Baskets inspected.....			29			29
Boxes inspected.....						
Yard and counter measures.....	5		69			74
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....	18					18

## SUMMARY OF TESTS MADE IN VIGO COUNTY.

By Maurice Walsh, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	356	226	77	148		807
Weights inspected.....	1,080	121	100	101		1,402
Dry measures inspected.....	105		350			542
Liquid measures inspected.....	885		168			1,052
Milk jars inspected.....						
Automatic pumps and gauges.....	66	20	3	4		93
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....	61		157			218
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....						

## SUMMARY OF TESTS MADE IN HUNTINGTON COUNTY.

By D. S. Austin, Inspector.

	Correct.	Adjusted	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	801	68	112	20		1,001
Weights inspected.....	390	118	19			527
Dry measures inspected.....	280		18			328
Liquid measures inspected.....	698		82			780
Milk jars inspected.....	82		11			93
Automatic pumps and gauges.....	106	20	7	11		143
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....	1,953		108			2,061
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....						

It is interesting to note that out of 126 gravel wagon beds inspected 83 were found incorrect and only 43 correct.

## SUMMARY OF TESTS MADE IN GRANT COUNTY.

By J. B. McGuffin, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	627	94	42			763
Weights inspected.....	127					127
Dry measures inspected.....	66		7			73
Liquid measures inspected.....	361		49			410
Milk jars inspected.....						
Automatic pumps and gauges.....	68	1	1			70
Baskets inspected.....						
Boxes inspected.....			10,000			10,000
Yard and counter measures.....	52					52
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....	68					68
Miscellaneous inspections.....						

## SUMMARY OF INSPECTIONS MADE IN DELAWARE COUNTY.

By C. D. Helm, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	598	95	105	264		1,057
Weights inspected.....	1,229	105	35	36		1,405
Dry measures inspected.....	255		270			525
Liquid measures inspected.....	331		59			390
Milk jars inspected.....						
Automatic pumps inspected.....	56	7		4		67
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....	10		30			40
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						

Mr. Helm reports three prosecutions, two convictions and one acquittal.

## SUMMARY OF TESTS MADE IN CRAWFORDSVILLE.

By John T. Sullivan, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	778	192	56	132		1,158
Weights inspected.....	1,171	18	2			1,191
Dry measures inspected.....	268		30			298
Liquid measures inspected.....	194		12			206
Milk jars inspected.....						
Automatic pumps.....	38	18	2	3		61
Boxes and baskets.....	298					298
Yard and counter measures.....	174					174
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						

Mr. Sullivan reports two prosecutions and two convictions. In each case the defendant was fined \$10.00 and costs, amounting to \$20.00.

## SUMMARY OF TESTS MADE IN MADISON COUNTY.

By William H. Lagle, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	235	2	67	38		342
Weights inspected.....	235					235
Dry measures inspected.....	170		28			198
Liquid measures inspected.....	61		12			73
Milk jars inspected.....	390		41			431
Automatic pumps and gauges.....	21	3		4		28
Baskets inspected.....	13					18
Boxes inspected.....						
Yard and counter measures.....	100		9			109
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....						

## SUMMARY OF TESTS MADE IN VERMILLION COUNTY.

By Pearl Edmonds, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	281	60	37	31		409
Weights inspected.....						
Dry measures inspected.....	49		38			87
Liquid measures inspected.....	78		27			105
Milk jars inspected.....	472					472
Automatic pumps and gauges.....	11	8				19
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....	11		17			28
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....						

Mr. Edmonds reports 7 prosecutions and 7 convictions. In each case the defendant was found guilty and fined \$10.00 and costs.

## SUMMARY OF TESTS MADE IN LAGRANGE COUNTY.

By Clarence T. Robinson, Inspector.

	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Reinspected.	Total In- spections.
Scales inspected.....	361			121		482
Weights inspected.....						
Dry measures inspected.....	166		72			238
Liquid measures inspected.....	83		71			154
Milk jars inspected.....						
Automatic pumps and gauges.....	10	53	11			74
Baskets inspected.....						
Boxes inspected.....						
Yard and counter measures.....						
Gas meters inspected.....						
Electric meters inspected.....						
Taxi meters inspected.....						
Glass graduates.....						
Miscellaneous inspections.....						

The above report shows work done between June 26 to December 1, 1914.

SUMMARY OF TESTS MADE, TOGETHER WITH THE NUMBER OF PROSECUTIONS AND THE AMOUNT OF FINES PAID IN ALL CITIES AND COUNTIES OF INDIANA.

Cities and Counties.	Weighing Machines.	Weights.	Capacity Measures.	Milk Jars.	Automatic Pumps and Gauges.	Boxes and Baskets.	Yard and Counter Measures.	Gas, Electric and Taxi Meters.	Glass Graduates.	Miscellaneous.	Prosecutions.	Convictions.	Cases Dismissed or Continued.	Fines.
Indianapolis	4,906	3,617	8,195	402	60	242	1,131	56	16	...	41	21	20	\$420 00
Franklin	500	302	7,200	402	19	...	235	...	...	...	...	...	...	60 00
Terre Haute	602	502	7,605	1,880	...	435	...	...	...	366	3	3	...	75 00
Fort Wayne	1,326	746	1,925	128	...	...	268	5	...	...	4	4	...	...
South Bend	1,127	1,048	4,774	3	6	...	105	32	...	...	...	...	...	...
Gary	257	273	201	...	2	...	73	...	...	...	6	5	1	160 00
Mazon	1,293	832	558	...	311	4,000	108	...	...	...	3	1	2	20 00
Lafayette	1,662	...	1,092	...	...	...	...	...	...	...	3	1	...	20 00
Richmond	375	41	90	...	88	...	153	...	...	...	4	2	2	40 00
Elkhart	905	57	56	248	160	339	24	26	...	...	4	3	1	60 00
Columbus	1,164	1,222	1,203	129	...	977	157	33	...	196	2	1	1	20 00
Kokomo	636	1,016	1,016	...	51	...	51	...	...	...	8	5	3	100 00
Mishawaka	202	292	218	...	26	...	...	...	...	...	...	...	...	...
Vigo County	807	1,402	1,594	...	83	...	218	...	...	...	...	...	...	...
Lake County	390	432	432	2	57	29	74	...	...	...	...	...	...	...
Madison County	401	235	153	431	28	18	109	...	...	18	2	2	...	40 00
Montgomery County	1,158	271	504	...	61	298	174	...	...	...	...	...	...	...
Grant County	763	1,127	483	...	70	10,000	52	68	...	...	3	2	1	40 00
Delaware County	1,037	1,405	915	...	67	2,061	40	...	...	...	...	...	...	...
Huntington County	1,001	527	1,108	93	143	...	...	...	...	...	7	7	...	140 00
LaGrange County	483	...	392	472	74	...	28	...	...	...	...	...	...	...
Vermilion County	409	219	192	...	19	...	...	...	...	...	...	...	...	...
State	165	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	19,877	14,234	28,665	3,768	1,345	16,290	4,076	155	84	580	98	57	31	\$1,198 00

Percentage of scales found incorrect.....	22.2%	Automatic pumps and gauges found incorrect.....	22.4%	
Percentage of weights found incorrect.....	9.6%	Percentage of boxes and baskets found incorrect.....	8.4%	
Dry measures found incorrect.....	18.2%	Percentage of yard and counter measures found incorrect.....	12.1%	
Liquid measures found incorrect.....	36.0%	Percentage of gas, electric and taxi meters found incorrect.....	36.0%	
Milk jars found incorrect.....	41.0%	Percentage of glass graduates found incorrect.....	2.0%	
The grand total of inspections made for the year 1914.....				88,223

SUMMARY OF TESTS MADE IN INDIANA OF RAILROAD TRACK SCALES WITH THE GOVERNMENT TEST CAR FROM THE BUREAU OF STANDARDS, WASHINGTON, D. C., DURING PART OF SEPTEMBER AND OCTOBER, 1914.

Month.	Date.	Year.	Companies.	Cities.	Amount of Test Weights Used.	Left Section.	Second Section.	Third Section.	Fourth Section.	Right Section.	Classed.	Remarks.
September	16	1914	C. I. & D. Ry. Co.	Hammond	90,000 lb.	+140	-50	-90		+180	Excellent.	
September	16	1914	C. I. & S. Ry. Co.	Hammond	90,000 lb.	-170	-190	-200		-150	Excellent.	
September	16	1914	Goldschmidt Refining Co.	East Chicago	90,000 lb.	-60	-280	-200		-620	Poor	
September	17	1914	Int. Lead Refining Co.	East Chicago	90,000 lb.	+10	-70	-140	+90	+10	Excellent.	
September	17	1914	Inland Steel Co.	Indiana Harbor	90,000 lb.	+100	+130	+140		+100	Excellent.	
September	18	1914	State Prison	Michigan City	90,000 lb.	-400	-300	-20			Good.	Rail binding.
September	18	1914	Monon Ry. Co.	Michigan City	90,000 lb.	-7,700	-4,500	-3,300	-3,700	-7,200	Bad.	Scale binding.
September	18	1914	Michigan Cent. Ry. Co.	Michigan City	90,000 lb.	+20	+40	+110		+130	Excellent.	
September	19	1914	C. I. & S. Ry. Co.	South Bend	90,000 lb.	-120	-200	-300		+180	Fair	
September	21	1914	L. S. & M. S. Ry. Co.	South Bend	90,000 lb.	+100	+90	+180			Excellent.	
September	21	1914	Grand Trunk Ry. Co.	South Bend	90,000 lb.	-2,720	-3,380	-280	-360	-600	Bad.	
September	21	1914	Oliver Chilled Plow Co.	South Bend	90,000 lb.	+120	+100	-20	+160	+100	Fair.	
September	22	1914	Vandalia Ry. Co.	South Bend	90,000 lb.	-100	+200	+340			Excellent.	
September	22	1914	L. S. & M. S. Ry. Co.	Elkhart	90,000 lb.	-120	-130	+410	-160	-400	Excellent.	
September	22	1914	L. S. & M. S. Ry. Co.	Fort Wayne	90,000 lb.	-320	+210	+490		-600	Poor	
September	24	1914	Nickel Plated Ry. Co.	Fort Wayne	90,000 lb.	+30	-350	+190		-130	Fair	
September	25	1914	Walsh Ry. Co.	Fort Wayne	90,000 lb.	+270	+90	+140		-40	Excellent.	
September	25	1914	Penn. Ry. Co.	Fort Wayne	90,000 lb.	+20	+160	+10		+140	Excellent.	
September	25	1914	L. E. & Ft. W. Ry. Co.	Fort Wayne	90,000 lb.	+20	+160	-100		+100	Excellent.	Steam pipe resting on fifth lever.
September	28	1914	Penn. Ry. Co.	Richmond	90,000 lb.	-500	-460	-770		-980	Poor	Lever binding.
September	28	1914	Penn. T. Ry. Co.	Richmond	90,000 lb.	-600	-220	-420		-380	Poor	
September	28	1914	Champion Milling Co.	Richmond	90,000 lb.	+170	+130	+140	+125	+145	Excellent.	
September	28	1914	C. & O. Ry. Co.	Richmond	90,000 lb.	+220	+120	-120	+20	-80	Excellent.	
September	29	1914	Penn. Ry. Co.	Indianapolis	90,000 lb.	-10	+30	-350		-360	Good	
September	30	1914	American Hony Mills	Indianapolis	90,000 lb.	-140	-60	-2,700		-60	Poor	Cross tie resting on angle iron.
September	30	1914	Indiana Elevator Co.	Indianapolis	90,000 lb.	+70	-120	+30		+110	Excellent.	
October	1	1914	Citizens Gas Co.	Indianapolis	90,000 lb.		+200	+430	+60	-510	Fair	
October	1	1914	Belt R. Co., Stock Yards	Indianapolis	90,000 lb.	-60	-40	-60		+20	Excellent.	Scale broke 90,000 lb. weight.
October	1	1914	Fiel Bros. Starch Co.	Indianapolis	90,000 lb.	-40	+50	+120		-20	Excellent.	
October	2	1914	Big Four Ry. Co.	Indianapolis	90,000 lb.	+10	+40	+30	+40	+260	Excellent.	
October	2	1914	Big Four Ry. Co., Brightwood	Indianapolis	90,000 lb.	+40	+40	+30		+100	Excellent.	
October	2	1914	Shelby St. Yards, Big Four Ry.	Indianapolis	90,000 lb.	+60	-40	+170	-70	-70	Excellent.	
October	3	1914	Vandalia Ry. Co.	Indianapolis	90,000 lb.	-120	-30	+60		-70	Excellent.	

SUMMARY OF TESTS MADE IN INDIANA OF RAILROAD TRACK SCALES WITH THE GOVERNMENT TEST CAR FROM THE BUREAU OF STANDARDS, WASHINGTON, D. C., DURING PART OF SEPTEMBER AND OCTOBER, 1914—Continued.

Month.	Date.	Year.	Companies.	Cities.	Amount of Test Weights Used.	Left Section.	Second Section.	Third Section.	Fourth Section.	Right Section.	Classed.	Remarks.
October	5	1914	Vandalia Ry. Co.	Bushrod	90,000 lb.	+90	+70	+100		-90	Excellent.	
October	6	1914	Big Four Ry. Co.	Vincennes	90,000 lb.	-220	+150			-260	Excellent.	
October	6	1914	C. & E. I. Ry. Co.	Vincennes	90,000 lb.	+20	-160	-20			Excellent.	
October	7	1914	L. & N. Ry. Co.	Evansville	90,000 lb.	-10	+20	+60		+120	Excellent.	
October	7	1914	Cook Brewing Co.	Evansville	90,000 lb.	-230	-110	+10	-20	-160	Excellent.	
October	7	1914	C. & E. I. Ry. Co.	Evansville	90,000 lb.	+100	+90			-130	Excellent.	
October	7	1914	Evansville Brewing Co.	Evansville	90,000 lb.	-600	-60	+120		+340	Fair.	
October	8	1914	Alton-Eskine	Evansville	90,000 lb.	-400	-60	+60		-40	Good.	
October	9	1914	C. & E. I. Ry. Co.	Terre Haute	90,000 lb.	+80	-40	+320		-20	Excellent.	
October	9	1914	Vandalia Ry. Co.	Terre Haute	90,000 lb.	+130	+150	+350		+120	Good.	Rail binding.

The classification of scales are based on the average percentage of error of tests made of the several sections. The State specifications allow .2 of 1% error.

## LETTER TO MR. AMOS BUTLER.

INDIANAPOLIS, December 15, 1914.

Mr. Amos Butler, Secretary State Board of Charities, Indianapolis, Ind.:

My Dear Mr. Butler—I wish to report some of the conditions under which the scales at the institutions have been condemned and condemned for repairs.

*Eastern Hospital for the Insane, Richmond.*—All scales found in very good condition.

*School for Feeble-Minded Youth, Ft. Wayne.*—One platform and one suspension scale adjusted, one platform scale condemned for repairs. This scale was very rusty, being used in the meat room.

*Indiana State Prison, Michigan City.*—One counter scale adjusted, two platform scales condemned for repairs, bearings old and dull causing the scale to break very slow.

*Northern Hospital for Insane, Logansport.*—One platform scale cleaned and adjusted, one counter and suspension scale condemned for repairs. Suspension scale in meat room where all meat for institution was weighed was found to be binding causing the scale to weigh incorrectly. One counter scale was condemned; bearings old and worn.

*State Soldiers' Home, Lafayette.*—All scales found in good condition except wagon scale, which had to be cleaned and adjusted.

*Hospital for Treatment of Tuberculosis, Rockville.*—One wagon scale was cleaned and adjusted. All other scales in good condition.

*School for Boys, Plainfield.*—All scales found to be in good condition. One fifty-pound weight was too light. One one hundred-pound weight was one and one-half pounds light and two two hundred pound-weights were one pound light. These weights were condemned last year with instructions to have them corrected or new weights purchased. This year they were confiscated and taken to the State House.

*Indiana Reformatory, Jeffersonville.*—One counter and platform scale condemned, weights on platform scale being two pounds light on fifty pounds. Counter scale old, bearings dull. All other scales found in good condition.

*Indiana Woman's Prison, Indianapolis.*—One wagon scale condemned for repairs, bearings old and rusty causing scale to bind. Bearing timbers rotten. One counter scale new; improper construction, condemned for repairs.

*School for Blind, Indianapolis.*—All scales found in good condition.

*School for Deaf, Indianapolis.*—One wagon scale condemned for repairs, frame being rotten, causing the anchor bolt at corner to drop which caused the platform to bind, making it impossible for the scale to weigh correctly. One platform scale adjusted. Poise on platform scale light two pounds. Adjusted.

*Indiana Girls' School, Indianapolis.*—One spring scale condemned, spring being weak, causing the five pound weight to weigh five pounds and three ounces and at times the scale would stick, showing that the five



pounds would only weigh four pounds. The other scales were found in good condition.

*Central Hospital for Insane, Indianapolis.*—All scales were found in good condition except the railroad track scale, which has not been repaired since my last inspection.

*Southeastern Hospital for Insane, Madison.*—One scale cleaned and adjusted. One one-hundred pound weight two pounds light. This weight was adjusted. All other scales in good condition.

*Soldiers' and Sailors' Orphans' Home, Knightstown.*—One wagon scale, bearings very old and worn; timbers of scales rotten; platform in bad condition. Scale pit filled with dirt and hay. This scale was condemned for repairs. Also one counter scale condemned for repairs.

*Village of Epileptics, Newcastle.*—All scales were in very good condition.

This is the second year the State Department of Weights and Measures has tested the standards used at the State institutions under the Board of State Charities. We find the equipments in a very much better condition than the first year they were tested. One reason for this is that persons having charge of the scales, weights and measures have endeavored to keep them in better condition. In a number of cases new scales have been installed to take the place of those condemned last year; others have been repaired and in this way the percentage of scales found incorrect has been reduced from 44.8 per cent. to 26.2 per cent.

Under the conditions imposed by the employment of, in some cases at least, inmate labor, the scales and measures at Indiana institutions are in fair condition.

Respectfully committed,

H. E. BARNARD, PH.D.,

State Commissioner of Weights and Measures.

## REPORT OF THE STATE DEPARTMENT OF WEIGHTS AND MEASURES OF TESTS MADE OF THE SCALES AND WEIGHTS USED AT STATE INSTITUTIONS UNDER THE SUPERVISION OF THE BOARD OF STATE CHARITIES.

The Weights and Measures Law as amended in 1913 makes it the duty of the State Commissioner of Weights and Measures annually to test the scales, weights and measures used in checking the receipts or disbursement of supplies in the institutions operated under the jurisdiction of the State Board of Charities. Inspector Willett during the year visited seventeen state institutions where he inspected eighty scales and 219 weights. In 1913, 44.8 per cent. of the scales tested were found incorrect and 14 per cent. of the weights were incorrect. In 1914 the percentage of incorrect scales

was reduced to 26.2 and of incorrect weights 13.3. Three scales were condemned outright; 10 were condemned for repairs. Four weights were condemned and 15 were condemned for repairs.

In general the equipments at institutions are in a very much better condition than at the time they were first inspected. This is due perhaps to the more intelligent care they are now receiving, and to an increased realization of the necessity of having scales and weights accurate and in good working order. In a number of cases new scales have been installed to take the place of those condemned in 1913.

The summary below shows the condition of the scales and weights at each institution visited:

STATE INSTITUTIONS.	Scales		Scales		Scales		Scales		Total Number		Weights		Weights		Weights		Total Number	
	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Scales Inspected.	Scales Inspected.	Correct.	Adjusted.	Condemned.	Condemned for Repairs.	Correct.	Adjusted.	Scales Inspected.	Scales Inspected.
Eastern Hospital for Insane, Richmond	7				7				7	20							20	20
School for Feeble-Minded Youth, Ft. Wayne	4	2		1	7				7	18				2			2	20
Indiana State Prison, Michigan City	5	1		2	8				8	25				1			1	26
Northern Hospital for Insane, Logansport	6	1		2	9				9	20				6			6	26
State Soldiers' Home, Lafayette	3	1			4				4	12								12
Hospital for the Treatment of Tuberculosis, Rockville	2	1			3				3	3	1							4
Indiana Boys School, Plainfield	3				3				3	2			4					6
Indiana Reformatory, Jeffersonville	2		2		4				4	8				4				12
Indiana Woman's Prison, Indianapolis	4		2		6				6	10								10
School for Blind, Indianapolis	4				4				4	10								10
State School for Deaf, Indianapolis	3	1		1	5				5	10				1				11
Indiana Girls' School, Indianapolis	2		1		3				3	5								5
Central Hospital for Insane, Indianapolis	3				3				3	16								16
Southeastern Hospital for Insane, North Madison	4	1			5				5	12				1				13
Soldiers' and Sailors' Orphans Home, Knightstown	1			2	3				3	10								10
Village of Epileptics, Newcastle	6				6				6	18								18
Southern Hospital for Insane, Evansville																		
Total	59	8	3	10	80	199	1	4	15	219								

Percentage of scales found incorrect.....26.2%

Percentage of weights found incorrect.....13.3%

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